

DECEMBER 1961

ARMED FORCES

Management

PUBLISHED FOR THE MILITARY SERVICES OF THE FREE WORLD



Lt. Gen. Howell M. Estes Jr.

How AF Reorganization Is Working . . .

pps. 14, 24.

- *Estes Delegates Work,
Demands Action p. 14*
- *Air Force's "Red Line"
Get's Quick Response . . . p. 24*
- *The High Cost of Bidding
On Defense Contracts . . . p. 16*



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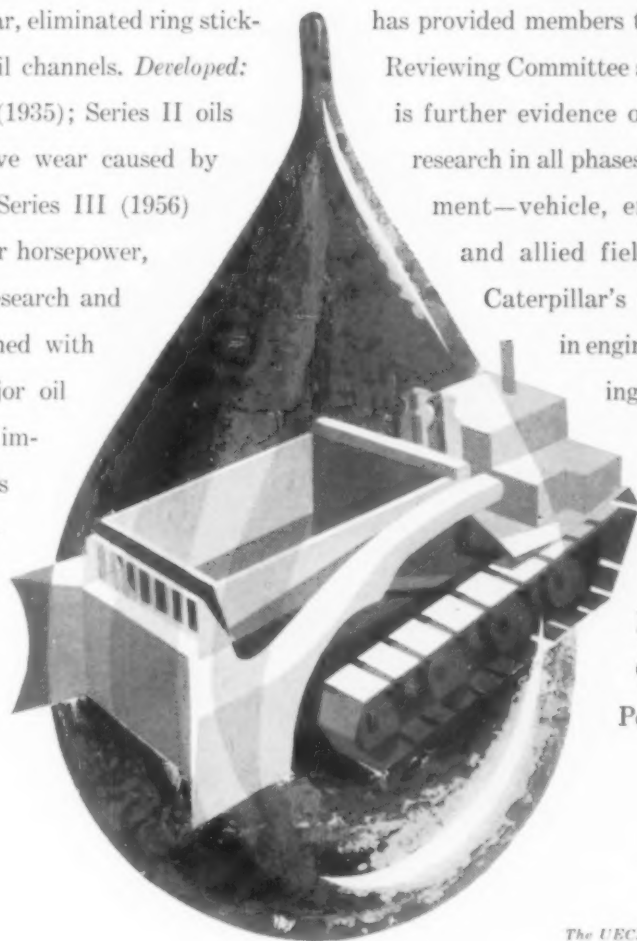
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DECEMBER 1961

ARMED FORCES

Management

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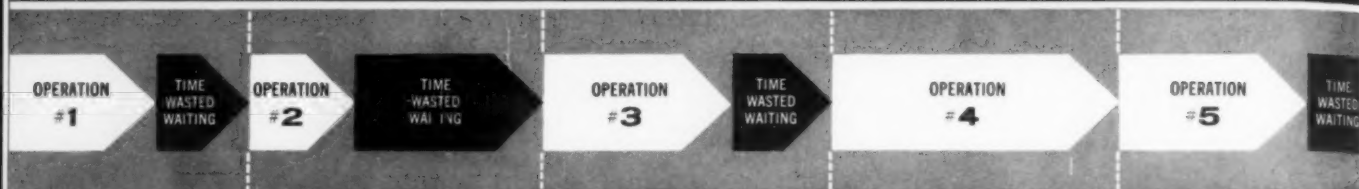
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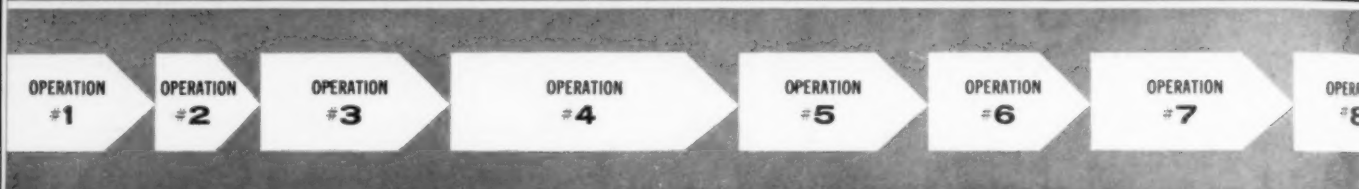
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In My Opinion

Caught Again

On page 21 of your September 1961 issue of **ARMED FORCES MANAGEMENT** your printed a picture of a ski-equipped C-130D turbo prop aircraft with the following caption:

"A MATS aircraft on an Arctic DEW Line re-supply mission." Please be advised that it should have read:

"A TAC aircraft on an Arctic DEW Line re-supply mission."

More specifically, the credit goes to the 61st Troop Carrier Squadron (M) of the 314th Troop Carrier Wing (M), Sewart Air Force Base, Tenn.

Personnel associated with the DEW Line project pride themselves not only for accomplishing a difficult mission but also their status as team members of the Tactical Air Command (TAC).

TAC crews made history for being first Command to engage in sustained operations on the Greenland Ice Cap; and, during the past two and one-half years, airlifted over 50,000,000 pounds of high priority cargo while making several thousand landings on the ice cap. On many occasions, these crew members faced marginal ceilings and visibilities, blowing snow, while-outs, and the ever-present and dangerous sastrugi, all of which heightened the hazards of arctic flying.

Furthermore, the 61st Troop Carrier Squadron completed a highly successful venture in the Antarctic in February 1960. This mission marked another milestone in TAC's diversified operation in that the 61st Troop Carrier Squadron was the first Air Force unit to land at the South Pole and Marie Byrd Stations.

During both operations, the Squadron attained a scoreless accident record.

Maj. Benny Costello, USAF
HQ, 314th Troop Carrier Wing (M)
TAC
Sewart AFB, Tenn.

Almost made it

Because of my deep interest in the transportation aspects of the Department of Defense, resulting at least in part from by Chairmanship of the Second Hoover Commission's study of business operations of the Department, including traffic management, I have read with great interest and approbation your article (MATS, MSTs, MTMA—Needed: A Single Manager) in the September issue of **ARMED FORCES MANAGEMENT**.

There is not the slightest question about the need and desirability of transportation functions of the Depart-

The November issue of **ARMED FORCES MANAGEMENT** contains a magnificent statement of the program which military and civilian associates and I are endeavoring to carry out.

We are grateful to you and to the members of your staff for the time and effort you devoted to this study of our work.

Robert S. McNamara
Secretary of Defense

I think you have done a superb job in the November issue.

We will look forward to working with you in the future to obtain sound communications of our efforts in logistics management.

Thomas D. Morris
Assistant Secretary of Defense
Installations and Logistics

ment of Defense being coordinated. I am sure your article is doing a useful service in emphasizing that.

P. M. Shoemaker
Chairman of the Board
Erie-Lackawanna Railroad Company

The magazine was still on the presses when Secretary of Defense McNamara established the Defense Supply Agency which incorporated the Military Traffic Management Agency and the common supply agencies.

The Accused

An article appeared on page 47 in your publication of September, 1961, entitled "Reserve Officer Hiring: Unfair." It was most unfair to implicate the Commanding General, who has to manage with archaic regulations and restrictions a highly complex test center involving all the armed forces and their technical services and more than 100 development contractors employing some 24,000 people.

It would not have been fair of me to blame the Commanding General for the action of his subordinates when I was reduced to a lower grade. I have appealed my case through Civil Service channels and the oversight was corrected in due time.

Due to my appeal action, my colleagues suspect me to be the writer of the information upon which your article was based. To reassure all concerned,

will you be so kind as to drop me a few lines saying that my signature was not used as signer of the basic information. I have learned about these complaints only after reading your publication.

Edward E. Wahlkamp
Eau Gallie, Fla.

Sorry accusers, you've got the wrong man. Mr. Wahlkamp is definitely not the author of "Reserve Officer Hiring: Unfair" . . . —Ed.

Editors edited

Since your editorial staff has decided to appraise how well the defense establishment has been run during the past nine months, I have decided to make my appraisal of your editorial product. I write as one with 15 years experience as a military civilian and two years experience reading your magazine.

First, I believe you perform a valuable service as the only magazine I now know of that presents military management problems with no commercial ax to grind. I don't know how you do it, since you rely on advertisement to pay the bills like other magazines, but it is refreshing to read articles which are not thinly veiled attempts to promote the products of a particular company or a particular industry doing business with the Defense Department. One thing that makes your stories more readable is that every time you mention a weapons system you don't then give a boring recitation of every manufacturer who happened to place a bolt or a piece of wire on it.

Secondly, you are the only magazine sent to me or subscribed to by me that doesn't pick up the cudgel or a specific service or a specific aspect of the defense establishment. It is beneficial to be analyzed by at least one editorial staff that is not biased in favor of one particular service, of aircraft and missiles carrying nuclear warheads over conventional troops and firepower, etc.

Now for the criticisms. You should edit the material submitted to you by defense leaders more carefully. Frankly, some of my colleagues who submit material to you do not write so that I can understand them.

Secondly, you should budget your stories more carefully so that you do not overlook important aspects of the defense establishment for months on in. For example, my organization, the Corps of Engineers, has been overlooked for some time except for the one profile on Gen. Welling on how we

(continued on page 46)



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In the past 4½ years, Hughes has put more than 7,000 cost improvements into practice—saving \$103 million in defense and space dollars. Prudent management avoided these expenditures.

Savings like these in money, materials, time and human energy don't just happen. At Hughes, cost improvement is a corporate way of life. From top to bottom, in all plants and departments, employees submit ideas and suggestions without thought to personal gain. A comprehensive, fully

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Each improvement results in lower contract costs. Some of the major defense programs that benefit include the Polaris, Titan, Falcon and Mauler missiles, new 3-D radar-computer systems now in service on Navy ships and automatic armament controls for Air Force interceptors.

And new Hughes space projects—the Surveyor moon landing vehicle, the Syncom communications satellite, the ion engine for long space journeys—all will deliver full value for every dollar.

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EDITORIAL

On Messing Up . . .

1. THIS MAGAZINE has contended for over a year that Defense was going to have to put its own house in order before it was going to have a prayer of getting really effective, efficient performance out of its industry suppliers.
2. This magazine has contended for three years that there is a communications gap between the Pentagon top policy people and their field work force which makes the Grand Canyon look no larger than a roadside ditch.
3. This magazine has contended since it was first published that "the great majority" of Defense people are dedicated, conscientious, talented individuals whose 10, 12 and 14-hour workdays are concerned solely with getting the most national defense out of every taxpayer dollar they are given.

But the other five percent in paragraph three above (and five percent is a lot, whether applied to five million employees or 50 billion dollars), working under the protective cover noted in paragraph two, are fouling up the freight train that presumably should be at work in paragraph one.

And just as surely as apples grow on apple trees, Defense hasn't a prayer of significantly streamlining its buying operation until this ulcer is removed.

AFM is currently conducting a survey of Defense industry to find out (and reveal in an article in February) just how the supplier side of the team feels about the McNamara team and their challenges.

Clue to what's coming: the complaint in one area alone outlined on page 16 of this issue on the high cost of bidding for military contracts. And while some of the cost is due to unwise industry executives who have sold their superiors a bill of goods, much of the expense is being forced by the military.

There are horrendous examples by the day-to-day policy setters. And even beyond these, there are certain irresponsible, and occasionally even illegal, practices being perpetrated by individual military and civilian buyers at the working level.

Item: even though the new advertising allowability law forces industry to spend more of its own money on advertising, and though this money is not refunded by Defense, some military types are still telling companies how to advertise—and even where. Object of their effort: to get publicity for their weapon system.

Item: under the guise of "policy violation," industry and even the nation's press are being told by "security review" personnel that they can't say certain things, sometimes already a part of the public record, —even though there is nothing classified about the contents at all. (The press usually goes ahead, but they don't have much respect for the outfit they're writing about anymore.)

Industry finds it extremely difficult to force any of these issues openly. Even if they have a legal case, the military sore spot they want to clobber represents their customer. And the military representatives capable of messing up a relationship this badly are also capable—if they get angry—of making life impossible for a company.

Industry's theory: better to pay a little blackmail than a lot of scarce profits. Until Defense top management makes up its mind to close the communications gap, its very admirable desire to get a more efficient job done is never going to reach full fruition.

C. W. Boslund

—Publisher



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The View From Here . . .

Bad Advice on Computers

AN OCTOBER Budget Bureau circular asking government offices to give more attention to buying, rather than renting, computer systems appears, at first glance, to be the result of some accountants nightmare.

Defense, which makes up 75 percent of Federal government activity in the computer business, is privately hoping the circular is nothing more than an attempt to be fore-armed against possible onslaughts from that master of accurate hindsight, the General Accounting Office.

Certainly, Defense use of computers in the past five years is wide open to criticism by those who take merely a cursory view of operations from the standpoint of the dollar sign solely. There are computers, for example, that Defense has been using on a rental basis for over three years—and therefore would have been cheaper to buy initially than to rent.

While careful selection of unholy examples could paint a pretty black picture, computer experts (and the military has accumulated quite a lot of them in the past five years) will tell quite a different story.

Among the points they can, and should, make:

1—Defense has analyzed this buy-or-rent alternative regularly since 1957 and just as regularly come to the same conclusion, i.e. particularly in business applications unless a system is certain to remain stable and standard for at least four years, it's cheaper to rent than buy. Same criteria holds for the program that goes on the computer. During the present upheaval of De-

fense business operations, few systems or program show anything like the promise of a four-year stability.

2—The reason Defense has profited so heavily on the computer technological revolution has been because of industry willingness to "eat its own young"—in some cases, six months to a year after installation. Background: state of the art advances have been so rapid, that a computer regularly is conceptually obsolescent before the prototype is built, technically obsolescent before the first production model is delivered.

By renting, Defense can make computers fit the system rather than having to alter the system to fit the computer. In effect, the master would become a slave of the tool.

3—Defense has no desire, and can't afford, to go into the used computer business. Further, buying would be a budget line item that Congress would probably choke on. (Air Force alone would need \$350 million next year to buy the computers it will need—as against the \$70 million it asks for each year on a rental basis.)

4—The history of some of those computers which have been in operation more than three years, reveals the program was changed several times in each case to fit the computer when more modern equipment could have served the program as the commander desired.

There are other, just as critical, arguments but the nut of the matter is that any inference about the unquestioned desirability of buying rather than renting computer systems is, essentially, not very good advice.

Coping With Congress

Legislative liaison is one of the most sizzlingly sensitive jobs in the Pentagon, and the burner has been turned up even higher under politics-minded President Kennedy than it was under President Eisenhower.

Secretary of Defense McNamara has his pipeline to Capitol Hill (headed by Norman Paul) and each Service maintain one as well. Among the tasks they perform are: seeing that a never-ending stream of military witnesses testify to the almost never-ending list of congressional inquiries—often repeating the same testimony over and over to different people; and answering nearly 500,000 letters and telephone inquiries per year.

Important or not, these queries are handled with the "Red Telephone" urgency of a command decision to go to war. All Congressmen, regardless of official committee authority, are treated like debutantes because they, singly, appropriate the money and make the operating rules.

Presently Paul is circulating a document through the various legislative liaison offices calling for more cooperative efforts.


This effort makes sense. There is probably no other area in Pentagon operations where five groups working together could avoid more hot water and accomplish far more than each one working separately.

While each Service contends it must maintain some of its own "sales contacts" for one-Service oriented problems, legislative liaison presently has been turned, under Congressional pressure, into a catalyst for re-hashing debates the Service chiefs had assumed already solved during Joint Chiefs arguments.

To be effective, Paul's request must be given far more than just lip service. If not, a comparative analysis can show that legislative liaison fits just as neatly all the criteria of many other groups McNamara has already re-organized. And McNamara has already demonstrated he has no qualms about re-shuffling chairs if any outfit creates more problems than he thinks it is solving.

ASK ALPHA:

What's being done to perfect satellite relay for long-range communications?

Many things. An active development program is making material progress toward low-cost systems for communication by passive reflector satellites. / Another project is development of facilities, techniques, and equipment for ground-space-ground transmission of multiple-channel voice and high-speed data. / There's a new 60-foot diameter antenna of very high precision. ☐ It's all happening as part of a continuous program in communication via satellite being carried out by Alpha Corporation and the parent Collins Radio Company. ☐ The antenna—a steerable, parabolic system—is being installed at Alpha's space communication research station in Dallas. Here, the Space Systems Division is enlarging on experiments which already have used the moon and Echo I as relays in worldwide communication circuits. Next step: to transmit multiple channel voice and high-speed data between the U. S. and England, France, and South America, using active repeating satellites and multiple passive reflector satellites. ☐ There's much more to tell. And it's well worth hearing, if you're seeking new techniques, new facilities, or broad systems capability in space communication. Ask Alpha! Alpha Corporation • Dallas,  Texas • A division of Collins Radio Company ☐





Washington Background

How Much Is Enough?

A debate with far reaching consequences is being waged between military and foreign policy experts over whether the U.S.'s superior strategic strike force may not be "too superior" for our best national interests.

One side argues that the U.S. missile-bomber strike force has become so superior to the Soviet Union's that it is becoming in fact a strategic counterforce. This is much more than we need to deter all-out nuclear war, they contend, and is being used by Red China, and militarists and old-line Stalinists within the Soviet Union to undermine the position of Nikita Khrushchev.

The U.S. interest, they point out, is better served with Khrushchev as communist czar of the Russias rather than the militarists who would replace him. The experts maintain that our resources should be used to increase our para-military capability to fight the Soviet-exported "wars of revolution" throughout the world.

The other side in this debate argues that there is no such thing as too much defense, that estimates as to the Soviet strategic strike force have a way of drastically changing within a short period of time, that the stronger the U.S. military might is, the more options open to the Western diplomats at the conference table, and that those who feel that changes in Soviet leadership means significant changes in Soviet policy are deluding themselves.

Base Closure Just Starting

The base closure and/or cutback list announced by Defense Secretary McNamara in mid-November is just a start. The November announcement, and future closures, are based on a study launched last May. Summed up one member of the Economic Advisor's staff: "There's an awful lot of fat in the 6700 military installations we have around the world. We'll be getting to more of them later. The current list might be termed just a first cut."

Behind the move is top Defense management conviction that the drain on precious resources by bases with only marginal, or less, value must be plugged—particularly under increased cold war pressure of late.

Program Packages Being Warped

Although the front office doesn't consider it "a difficulty," the program package approach to the budget is having trouble meshing with the old system of budget formulation. The Services have been putting programs together and having them approved by the package side of Hitch's shop only to watch them be pulled apart by the line item side of the house.

"We can do one or the other," one Service programmer said, "but we can't do both at the working level without creating just as many problems as we solve." Solution: line item budgets in any form for anyone's benefit must be dropped as soon as possible.

McNamara Get's Hill Support

The recent "mutual admiration society" night held in Georgia by Secretary of Defense Robert S. McNamara, Rep. Carl Vinson (D. Ga.) chairman of the House Armed Services Committee, and Sen. Richard Russell (D. Ga.) chairman of the Senate Armed Services Committee is an indication of McNamara's growing support and respect on Capitol Hill. Russell and Vinson, who have given past Secretaries of Defense fits as witnesses before their committees, heaped praise upon McNamara, who matched compliment with compliment.

Two traits which impress the politicians most are McNamara's willingness to listen, and his ability to answer questions in detail without calling on an aide. One Senator, critical of McNamara's so-called muzzling of military officers: "I've never caught him giving me a snow-job yet."

All of this respect and good-will will come in handy next January when McNamara presents his money demands to Congress. It is rumored he will give the entire presentation himself without yielding to subordinates.

PENTAGON PROFILE

Lt. Gen. Howell M. Estes

*Deputy Commander, Aerospace Systems Office,
Air Force Systems Command*

*“ . . . You must
provide a streamlined
procedure . . . ”*



LAST APRIL when Air Force made the sweeping reorganization which scrapped and integrated portions of the Air Materiel and Air Research and Development Commands in order to speed up development and delivery of aerospace systems, there was the usual confusion that accompanies such a move. Outsiders, and certainly many insiders, seeing (and suffering) the top-to-bottom reshuffling and upbeat public relations announcements, couldn't help wondering how it would all boil down.

They hadn't yet encountered tough and direct Lt. Gen. Howell M. Estes, Jr., Deputy Commander of the new Aerospace Systems Office, Air Force Systems Command.

Though he would be first to deny it (and a surprising number among his staff don't know it), the reorganization was mainly the brainchild of the strapping 47-year-old West Pointer, ex-cavalryman and SAC veteran who has been setting somewhat of a record as a bright young administrator ever since transferring from horses to airplanes in 1940. In 1944, at the age of 29 and only eight years out of the Point, Estes was a full colonel and had already commanded two air bases. Along with his administrative experience, he is a veteran research and development man, having served as Director of Weapons Systems Operations, Wright Air Development Center, and as Assistant Deputy Commander for Weapons Systems, and Director of Systems Management.

Breaking the Chain

His Pentagon duty includes assignments as Assistant Chief of Staff for Air Defense Systems and Assistant Deputy Chief of Staff (Operations), Hq. USAF. It was on Estes' first assignment following graduation from West Point in 1936 that he picked up a basic point of management philosophy that is one of his cardinal rules today. Appointed acting aide-de-camp to the commander of the 2nd Cavalry Brigade, he was asked to set up a special training group for new personnel. The commander told him, in effect, "Don't bother me with any details, just get out and do it." The point: Delegation of much authority.

The Estes method of getting top efficiency from men and organizations involves two key concepts: (1) delegation of as much authority as possible, and (2) provision for quick access to top management.

Using some of the general's own

words, these translate to: (1) "Get the hell out and get the job done," and (2) "break the damn daisy chain" of management organization which so often hampers decision-making—and progress.

The reorganization resulted in two new commands: Air Force Systems Command, headed by Gen. Bernard A. Schriever and responsible for all phases of research, development, test, procurement, production and site activation for all aerospace systems; and Air Logistics Command, responsible for worldwide logistic support.

Merging Duties

Also scrapped in the move were the Ballistic Missiles Center, an element of the old Air Materiel Command, and the Ballistic Missile Division, part of Air Research and Development Command. These, with portions of the U.S. Army Corps of Engineers, responsible for missile site construction, were integrated into two AFSC divisions, the Ballistic Systems Division and the Space Systems Division—both immediately responsible to Estes as Schriever's on-the-spot deputy in Inglewood, Calif.

Estes isn't a neryous man, but he likes to talk on his feet. Roughing out organization charts on his office blackboard, he explained that one of the big problems under the old ARDC setup was the matter of trying to draw a line between development/test and procurement/production. These areas actually start merging rather early in the game and become inseparable. Under AFSC, this problem doesn't exist, for that command is responsible for everything up to site activation. After that, ALC takes over.

Another major shift in responsibility came with creation of two divisions out of the old BMD, which had been charged with development of both missiles and space systems. This was seen as a natural result of Space Age progress, what with development of systems strictly for space, such as *Samos*, *Midas*, *Discoverer*, *Bambi* and *Saint* becoming a multifaceted task in its own right.

Delegate Authority!

"Too many things are done by committee these days," Estes says. "In order to get things done, you've first got to put the maximum responsibility where the maximum number of facts are. You've got to delegate as much authority to as low a level as possible. At the same time, you must provide a

streamlined procedure for going right to the top for rapid, positive and final decisions."

When Estes delegates authority, "a man either does the job or gets fired." This sounds tough, and it is. But in practice, what it amounts to is that the man is given the go-ahead, with maximum support and minimum housekeeping chores, to wrestle with the main problems and make decisions. An eager, conscientious executive could hardly ask for more.

In establishing BSD and SSD, Air Force sorted out from the predecessor organizations all matters pertaining to administrative housekeeping and put them into a separate support group directly under Estes' office, freeing divisions of the more routine headaches.

Estes, who tries to play down his role, doesn't attempt to manage details of the division commanders' programs. "That's their responsibility," he says. "When they have a problem, they come to me." He has a personal staff of 35 which makes a continuing analysis of how the job is proceeding in both divisions.

"Not for the purpose of telling the division commanders how to do their jobs," he says, "but to see whether we are doing the job with really efficient management. If we are not doing the job efficiently, my staff reports to me how we could have done it better, and then it is up to me to issue directives to the two divisions commanders."

"No one on my staff has the authority to tell the division commanders how to run their divisions," he stresses. "So my staff isn't harassing those people. It doesn't get involved in the technical part of the program at all. Only I do that. If we need a new technical decision, if we want to make a significant change in the program, then I sit with the commander and approve what comes out."

"We do not want this staff of mine to be an additional level of review for the technical programs in the divisions. That is why it is not permitted to get into the technical part of the program."

To provide for top-level management responsiveness with minimum reaction time, the new setup incorporates a "redline" procedure under which a system program director, somewhat equivalent to a commander in the field, has, in effect, direct and almost immediate access to the Secretary of the Air Force.

Under the old system, a lower-eche-

lon executive such as Brig. Gen. S. C. Phillips, System Program Director for *Minuteman*, would have taken his problem first to BMD, then to BMC, up the line to ARDC, touched base along the way with SAC, AMC and other interested parties, finally reaching, with luck, Headquarters USAF and the Secretary of the Air Force perhaps two weeks later.

Two Day Service

"With the new setup, a system program director can get to the Secretary of the Air Force without having to go through the whole damn daisy chain and without a lot of staff 'massaging' of what he says all along the line," Estes said.

Now the System Program Director calls a joint meeting with the BSD commander and Estes, then takes off directly for Washington and the USAF/AFSC review board at the Pentagon. Gen. Schriever and the Chief of Staff-Air Staff send representatives. As for the other interested parties, they now have representatives in the SPD's office.

"The SPD can get to USAF/AFSC in the morning," Estes said. "In the afternoon, he goes on to the Designated Systems Management Group, which sits directly off the Secretary of the Air Force. The review board has no authority to modify what the SPD has to say. The Secretary of the Air Force then makes his decision through the DSMG."

20 Raborns

"With this system, the SPD, who has an awful lot of work to do back home to keep his program going, only has to be away from his office perhaps two days, not two weeks. Part of the reason we can have this streamlined procedure is that we've got almost all the authority we need to run the program here in Inglewood. There are no small problems going up the line. Anything that gets up there is very complex and sophisticated."

"Adm. (William F.) Raborn, who heads the *Polaris* program, sits off the Secretary of the Navy. But the Navy's got only *Polaris*. We've got 20 programs, and we can't sit them off the Air Force Secretary like the Navy does *Polaris*. You could never handle them. But we've designed a method by which a system program director, who corresponds to Raborn, can get to the Air Force Secretary just as quickly as Raborn can to the Secretary of the Navy."

MR. BLUNT IS THE Military Liaison Manager of a large midwest electronics company. We find him checking final details in preparation for a visit to the company by a General who is inspecting the company's facilities in order to appraise their adequacy for projected programs. Among other things, Mr. Blunt is making certain that once the General steps down from the plane, he will suffer none of the inconveniences of the average air traveler. The checklist he is presently examining reads as follows:

1. Contact Joe at airline office. Have him make sure General's baggage is placed in special compartment at that end so it will be first off at this end and waiting at the baggage pickup station when the General gets there.
2. Joe at airline again. This time to arrange for Harry to greet General the minute he steps on ground.
3. Someone to pick up and carry General's baggage to car.
4. Someone to open door leading out to street.
5. Car to be waiting directly in front of entrance to airport building. Could be a hot day. Make sure air conditioner isn't malfunctioning like last time.
6. Nothing to block parking space in front of main company building. Lawns and walks to be given special attention that morning.
7. Someone to open front door of company building.
8. Appropriate parties to greet General in the lobby.

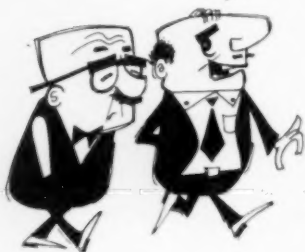
As Mr. Blunt reassures himself that everything has been attended to, his secretary informs him that their man in New York is calling. The New York man has a useful bit of intelligence—at least three of the five other firms conducting study programs on the Missile Advanced Defense (MAD) System are making films, one for certain a 20-minute job in sound and color, as part of the final presentation to the requesting military agency.

Mr. Blunt is aware that a couple of films are in the works, but he doesn't know if one is for MAD. He checks, hopefully, with the Technical Communications Manager and learns the worst. No film has been requested for MAD.

"Well, then, we've just got to have one," he shouts into the phone. "Make it 20, no, we'd better have one 30 minutes long. And with sound and color." He listens to the anguished protests of the Technical Communications Manager and interrupts impatiently: "Don't tell me your problems. My 10-year-old son could do it in two weeks and you've got at least five. Send the authorization up for my signature but, in the meantime, get going on it."

As he hangs up the phone, his assistant Larry walks in with what appears to be a bonus item from the Everlasting Classics of World Literature Club. Two cloth-bound volumes are neatly contained in a cloth-bound case. Larry sets it proudly on Mr. Blunt's desk saying: "Here it is."

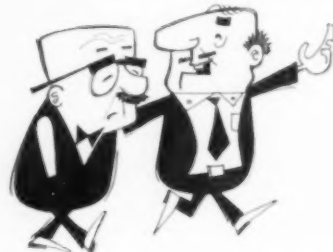
AFTER PASSING OUT OUR
TWO HUNDRED PAGE, FOUR
COLOR, PLUS GOLD AND
SILVER BROCHURE...



The High Cost Of Proposals And Presentations

by John Okada

I GAVE THEM
THE WIDE SCREEN
SLIDE SHOW, AND
FOR THE FINAL TOUCH...



TO THE UNINITIATED, the foregoing will probably seem humorous. To those in the Defense industry who have spent sleepless, pressure-filled nights, weekends, and holidays preparing ever bigger and fancier, but not necessarily better, proposal documents and presentations under impossible schedules, each word will probably irritate the ulcer further. To the taxpayer, if he ever finds out, all this will become yet another example of the torrential waste being committed in the name of Defense research and development.

Everyone in the Defense industry and in the commercial printing and publications concerns who has been associated with the "proposaling" and "presentationing" end of the business knows that he is grappling with a monster of gradually increasing complexity and proportions. Proposal documents, which several years ago were

done simply, austere, and adequately in the manner of technical papers produced by societies for members and by companies for internal use, have been upgraded to the point where they now frequently outclass in appearance and cost the finer volumes issued by the large book publishers. The entirely adequate, economic approach is now used only when company intelligence reports that a key individual on the requesting agency's proposal evaluation board is known to favor documents that are "sensibly," "reasonably," and "conservatively" prepared. Presentations have also undergone a similar transformation. Where simple flip charts and black-and-white slides were once the rule, the time, planning, equipment, skills, and money put into many current presentations far outstrip those made by advertising agencies to their big clients.

As to how much money is being spent unnecessarily for proposals and presentations cannot be determined without a careful survey. It would appear to be astronomical when viewed in terms of what an intelligent individual would consider adequate. What is spent on a single proposal or presentation, of course, is related to the dollar size of the anticipated contracts. Up to fifty or sixty thousand dollars appears not to be an unusual amount for a company to put into a bidding account for a single proposal and or presentation.

A Small Segment

When the competition is for a large, multimillion dollar program, the figure could and does quickly rise to over a hundred thousand dollars. On an even larger program involving the participation of several large companies as a

"Looks fine," says Mr. Blunt picking it up. "What is it?"

"The technical proposal for the Joint Equatorial Radar Kluge (JERK). Just came in from the bookbinder and not a moment too soon. Ted's flying it back to Washington on the jet tonight to make the 8 A.M. deadline for submittal."

Mr. Blunt's eyes light up a little. "Oh, sure. It threw me for a minute because I thought it was going to be done up in white."

"It was at first, you remember. But we had them redone in maroon when it turned out the manager of the radar division has a phobia against white covers. Gets too dirty. Pretty good point, I think."

"Sure," exclaims Mr. Blunt, "now I remember." He leafs through the expensive, commercially typeset pages and notes the rampant use of colors, illustrated divider pages, multiple acetate overlays, foldouts, and screened block diagrams and schematics. He replaces the two volumes into the case, noting that the fit is very comfortable, and stands it up on his desk. He comments, with admiration: "Looks great, just great. Make sure I get a copy."

"Certainly," says Larry, "but you'll have to keep it locked up. It's secret, you know."

"Yeah, I know," Mr. Blunt utters with a hint of disappointment in his manner. Suddenly, a thought strikes him:

"I've got an idea."

"What's that?"

"I was walking through Myron's Leather Shop last week and saw these real fine attaché cases. Real fine ones, I mean."

"Go on."

"How would it be if we got a couple of them—one for the colonel in charge and one for the chief technical evaluator—and put their copies of the books in the cases? No initials on the cases, mind you. Make it look like our man simply forgot to pick up the cases."

"Great," exclaims Larry, "how can we miss. And we sure could use the business what with our big programs running out."

"Don't remind me," moans Mr. Blunt.

As Larry rushes out to take care of the attaché cases, Mr. Blunt reaches into his pocket for a cigarette and comes up, instead, with a business card for the Audio-Visual Equipment Renters Company. He thinks back to his visit to that company and recalls most vividly all the new equipment they had for "wide screen" slides. And portable gold draperies that could be used theater-fashion with the wide screen. As he continues to search for his cigarettes, Mr. Blunt wonders if, perhaps, they couldn't work in the wide screen slide angle for the MAD presentation. ■



team, a quarter of a million dollars might be spent by one team. If a dozen teams are bidding, the amount spent by all would be around three million dollars. This represents the expenditure of only a small segment of the defense industry at a given time in response to a single request for proposal by a lone government or military agency.

One large company desperately seeking new business in view of in-house programs nearing termination can, during the course of a year, participate in fifty to a hundred proposal efforts and presentations without difficulty.

A computer would be required to estimate the surely staggering amount spent each year by industry in the pursuit of new and follow-on defense business. A quarter to half of this amount would appear to be a not unreasonable estimate of what could

probably be saved if the otherwise painfully explicit government and military agencies would, as explicitly, define in their requests for proposals sensible standards.

Sugar Coated

Cloth-bound classified proposal volumes (\$4.25 to bind each of Mr. Blunt's possibly 100 volumes plus \$8 for each cloth covered box), unnecessary use of color and screens on art and slides, attractive magazine type artist's conceptions, wide-screen slides with drapes, outright gift items like attaché cases, and a thousand other cost-adding gimmicks for dressing up a technical document or presentation would be immediately banned.

Why, after all, should a classified document, one of as many as thirty or forty representing different approaches to the same problem and all but the

successful one destined to be destroyed within a year's time, have to be an item that looks like a collector's prize? Why, for another, and granting their utility, must slide presentations and films be in wide screen or in full color? Why, to sum up the situation, should a technical document or presentation, ostensibly prepared to further the very serious cause of national defense, contain any embellishment designed solely to impress or to appeal to the aesthete when their only purpose should be to offer to the technical-military group a straightforward, concise picture of the company's technical concepts?

Standards aimed at eliminating these frills—and eliminating bidding companies who do not abide by the standards to the letter—can do much to reduce the unnecessary money and effort being frantically poured into proposing and "presentationing." ■

Effective Management...

Needed: An Effective Staff

An effective manager must have a staff that can collect, analyze, synthesize, and present a recommendation as a basis for decision and action. He should not have one that glamorizes reports with words to confuse issues and keep top management from facts necessary for an intelligent, knowledge-

able decision. A good manager's recommendations should be salable products, supported in detail, if necessary. This support comes from only one source—his staff. If it is a good one, it will not waste his time with flimsy and meaningless reports.

PROGRESSIVE summarization — pyramidal reporting—report by exception. These catchwords have spread like wildfire in management circles. They have become a part of the common language currently in wide use between management echelons. Some describe them as new elements which are mandatory pieces of any progressive manager's toolbox. Others decry them as mere words used by staff people to confuse issues and keep top management from "facts" it does not want to hear. What do these terms really mean?

Some staff people have used them to describe the principles they employ to prepare the data they present to management. They infer that such data reduction provides intelligence from the multitudinous pieces of information which are gathered to determine the pulse of a business entity. In many cases, this description rings true. When it does, these staff people render an indispensable service to their organizations. They provide the decision-maker with necessary information which has not been camouflaged with extreme trivia, information which enables him to take positive actions based on sound judgments, and within minimum acceptable time frames. Such a capability is prerequisite to effective management of any enterprise. Staff men who practice this concept can well be proud of their efforts.

On the other hand, the phrases have sometimes served to clothe the vagaries

of the inadequate who are graced with various professional titles, but all charged with promoting effective management. These staff people in their role as advisors to management have too often used a foundation of mere verbiage to tell the boss everything about nothing and nothing about everything. They sometimes present one "startling fact," fully substantiated, but unrelated to many other bits of information so that analysis of its total importance cannot be made, nor can any action be taken without further research. This unintelligible "ese" dissipates the manager's invaluable time and provides him, for business purposes, with a dearth of usable information. Unfortunately, it does not always stop at this stage.

The Three Steps

Some managers have become so adept at juggling this meaningless information that they use it to hypnotize themselves into believing they really know what is happening in the business. When called upon to account to their superiors for resource utilization and work accomplishment, they employ it in an effort to explain how they have acquitted themselves of their responsibilities. Such actions, when accepted, allow the manager to disregard any detailed questioning, even by himself, as long as the "people upstairs" do not interrogate him. He is not forced to ask whether his responsibilities are be-

ing executed as effectively as possible.

This indictment is made to illustrate a problem, not to chastise the inadequate, whether they are management or staff. Accepting the existence of the problem, let us attempt to examine these words which are constantly thrust at all of us, to determine what they mean, and predict whether the inferred objectives of the phraseology might be achieved.

A manager in an organization is normally given limited resources with which he is expected to accomplish certain assignments. In order to insure that adequate intelligence is generated for decision making during the execution of such tasks, the manager must have staff assistance. The steps which must be taken to provide this assistance are: collect information, analyze it as data, synthesize it into intelligence, and submit it as a basis for decision. Two responsibilities exist. The staff man must accomplish the steps. The manager must see that he does; and then, using the basis presented, he must act. The staff man formulates the basis for decision. The manager does the deciding. The objective at hand is to examine how the first of these responsibilities can be executed.

Certainly no one with any business acumen would argue that an administrator should be required to examine more detail than the minimum necessary to perform his assigned responsibilities. On the other hand, these proponents would not theoretically refuse

this administrator any mandatory details he might need to determine whether he accomplished his assigned duties. To examine this theory, a look at how the military develops information into combat intelligence is worth while. Combat intelligence forms the basis for a decision which promulgates action involving more than an operating statement. In fact, many times the decision influences the living and dying of people.

It may seem farfetched indeed to liken the function of combat intelligence to that of generating management actions in the business world. Many would say that the situations for combat intelligence are altogether different from business or peacetime government operations. The disparity is too great. Maybe they are right. It is difficult to imagine such a comparison. Nevertheless, in both cases the goal is intelligence. In our case, it is *management* intelligence. The process is essentially the same in both instances. Only the particular circumstances and specific objectives differ. Since the operation of combat intelligence has been effectively systematized, we can learn from the technique. It consists of three phases.

1. *Collect*: Combat intelligence cannot be generated without a system which collects information. Direction of the system is essential. This consists of first determining what information must be collected, and then who will accomplish the effort. The necessary specific orders and requests are issued and the collection activity is supervised. Since a great many pieces of information must be gathered, it cannot be presented to the field commander in its raw form or based on only a cursory examination. First of all, it would take a very long time to present. Secondly, most of it alone would mean nothing. The commander would be told nothing about everything. On the other hand, if a general area were selected and all data were presented, this would be telling him, in essence, everything about nothing. Fortunately, intelligence officers are not taught to act in this manner. The function of combat intelligence assumes at this point, and rightly so, that it has only collected a great deal of specific information. It does not make an effort to disguise such information with phraseology which will depict it differently.

2. *Process (Analyze and Synthesize)*: Continuously during the collection phase, an effort to collate this information is made. That is, like pieces of information are put together, and comparisons are made. An effort is made to determine what such pieces of information mean. All data is related to

previously verified accurate data. In management terms, this is the act of analysis. Next comes synthesis. Synthesis is the act of putting back together all of the pieces of information which have been analyzed so that they can be stated as meaningful conclusions.

The actions of analysis and synthesis in military intelligence terms are called processing. The pieces of information are compared and studied to determine pertinence, credibility and accuracy, and interpreted to determine significance. This action is accomplished rapidly, methodically, and logically to produce timely intelligence.

3. *Formulate Decision*: Processing, then, puts together all pieces of information which have been collected and collated and determines what the total means. In military terminology, it evolves into what is called the estimate of the situation. The military definition of an estimate of the situation states: "A logical and orderly examination of all factors affecting the accomplishment of the mission to determine the most suitable course of action in arriving at a decision." This decision must answer who, what, how, where, when, and why. The decision so formulated is made by a staff officer and is rendered as a recommendation to a commander. The commander examines the recommendation and determines to attack, defend, retreat, or try some other action. The important thing is, that based on the intelligence effort, he makes a decision even if this decision is to make no decision at this time. As soon as the decision is made, an order is issued, an operation planned and executed, and the results reported. Immediately the cycle begins again; in fact, it never stops.

Must Know Requirements

It is perhaps difficult to compare the decision making of a manager in business to that of a military commander in the field. The impact of the result in the event of error is too different. However, the functions that must be performed which generate the basis for a decision by either, are quite similar. These functions are: determination of information requirements, collecting the information, analyzing and synthesizing the information into intelligence, and submitting it as a basis for decision. In the business world, or in government activities short of shooting wars, the functions must be executed cyclically and continuously, just as they must be on the battlefield.

Just as the battlefield commander, every manager must know on a continuous basis what his requirements

are to produce satisfactory results within the resources he is provided. Further, he must know how to translate the results he gains into language understandable to his superiors if he is to continue in his present status or progress from that point. Since he does not normally have the time to do the whole job personally, he must have an intelligence unit which can bridge the gap for him between the collection of data and the production of intelligence which will provide him with an estimate of the situation and a recommendation for a decision. He has such a tool. Every management entity has such a unit. Some use it; some are used by it. As a result, some management really accomplish good performance; some exist and only that, or gradually disintegrate; or worse yet, some cause the organization as well as themselves to disappear.

The Staff's Future

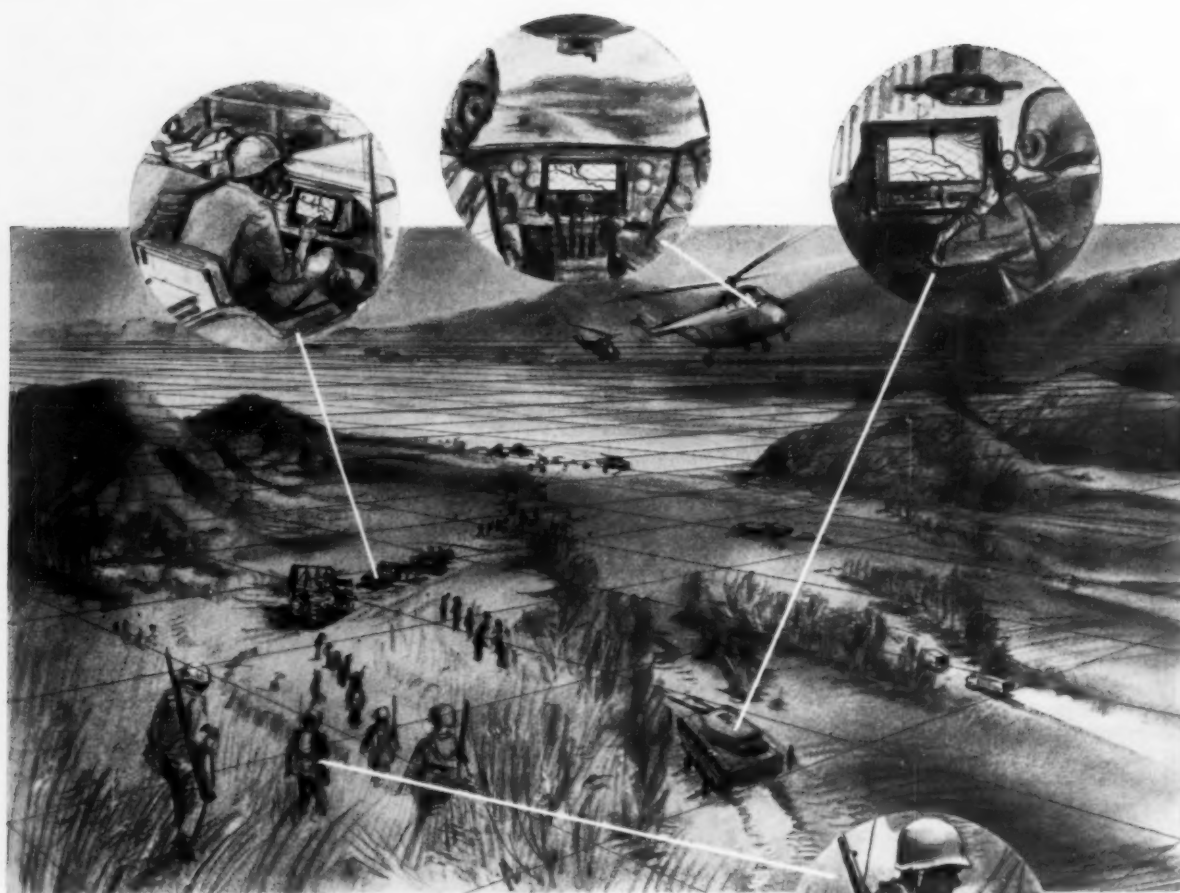
Accept that research, product engineering, manufacturing, sales, and distribution have made great strides since the early economists, in fact, great strides since Keynes. Accept that, as managers and advisors to management, we have at our beck and call punch cards, paper and magnetic tape, paper print-out machines, computers and all the paraphernalia that load us down with information telling us everything about anything we choose to direct to be recorded. However, ask these questions. Has technology, advertising, transportation and electronic information basically changed the manager's job—to make decisions?

Machines will process a great deal of information very rapidly. They will print paper by the bale. However, they will only print what the system designer has directed. The system must include a means of collecting new information to up-date that which is stored. It must also provide for analyzing and synthesizing new with stored data. This is a necessity of life for management and must be accomplished without machines unless we tell machines how to do it for us. Unless we know what we have directed to be analyzed and synthesized and then are able to evaluate results, it makes little difference whether we direct machines or men in such an effort.

So, the staff man is still required, with or without mechanization. How, then, do we proceed to accomplish this task of providing the manager with the basis for decision making?

Economic necessity has provided an instrument to which almost anything in the government and business worlds can be converted and measured. Sen-

(continued on page 38)



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"Let's Set The Record Straight"

Quite by accident I encountered Lt. Col. Douglass' article (Part II), "Military-Civilian Working Relationships, Sand in the Gears," in the October 1961, issue of ARMED FORCES MANAGEMENT. To this article, though I differ on several points, I say "Amen." Being that Part I has not been available to me my comments following may have been covered previously.

For my background, I will say that I have been USN and USNR in the commissioned ranks, am a USNA graduate, and now a GS-15 engineer in the U.S. Civil Service, with a total service of 33 years. The complexities, interference, derangements, and complications expressed by Col. Douglass have not passed me by—in fact, because of my background I have been expected to act the part of a subordinate officer (to the higher ranks), and still be a civilian. I, with others, have been called a "g-d" civilian by some of the military, and sought out eagerly by others for help.

There are pros and cons on both sides. Probably the worst I've encountered (I was then a GS-13 or P-6) was to be told by a USN captain "That before any civilian, including you, could take over supervision of the organization (I was senior civilian of the branch), it would be necessary for the command to pass through all the officers in order of rank including WAVES, to the lowest apprentice seaman in the organization." This attitude did not help morale, though it still exists in the agencies.

I ate my heart out in Washington during WWII because I was forced to remain there as a civilian even when BuPers offered me a destroyer command. However, SecNav directed me to resign my then reserve commission on the grounds "that you are more important to the Navy in your civilian position than as an officer."

Let me illustrate a contentious example by an actual case: I occupy one-half of a residential building at this Station, pay \$106.50 per month rent. My neighbor, a commander, USN, forfeits his rental allowance of \$125 for the other half as government furnished quarters. At first appearance this looks disparate and unfair to the military. The details are different—Lt. Col. Douglass to the contrary. The commander's house is furnished, mine is bare. He pays \$3.12 per month for his telephone, I pay \$5.32 for the identical service. He is allowed Public Works service in the form of fertilizer, fence repair and such, while I must buy my own. Lastly his rental allowance and subsistence are income tax exempt while I am in the 26% bracket on Federal Income Tax, my rent being taxed, also my subsistence. At the same time any increase in rent is charged back to me while he is covered fully by his allowance.

There are other differences: he has no deduction from his pay, e.g., 6½% toward retirement as I must pay. Of course I pay on a higher salary so receive a higher retirement pay. However, his retirement is based on 2½% for

each year of service while mine is based on a variable scale from 1½ to 2% total dependent upon service length. At the same time he receives free medical care and "near free" for his family—I must pay for this—plus income tax on this care. He pays no personal property tax on his first \$1000 of property in California. I have no such exemption even on a military base. He is also privileged to augment his retirement by social security deductions, I am not. If he is ill, he continues on full pay and allowance for the duration of his disability. I must earn mine at the rate of 13 days per year and if I am short with no annual leave to consume, I go on no pay.

I believe the military can accumulate to 60 days annual leave at the rate of 30 days per year. This leave includes Sundays and holidays, though extra days can be given in increments of single days or half-days without charge. These thirty days start from first entry into the service. As a civilian, depending upon length of service, I earn 13 to 26 days (working days) per year, can accumulate up to 30. The military throws these 26 days against the civilian—interpreting them as 5 full weeks plus, of leave versus their 30 (or say 4 weeks time)—seldom mention the 13.

Col. Douglass' pay comparisons and rank comparisons are a bit "off" too. He rates GS-1 increases of 134 percent vs a Second Lieutenant (or Ensign) of 37 percent. Yet his "rank" table in the adjoining column compares a GS-1 with a E-1 enlisted grade. When I first entered the military service an enlisted apprentice seaman received \$18 per month plus subsistence (50 cents per day) plus lodging, plus a uniform allowance. An Ensign received \$125 per month, plus 60 cents per day subsistence, plus \$40 per month rental if married—total \$2199 per year. A comparable GS-5 (CAF-5 or P-1) received \$2000 per year. A GS-1 received \$1200 per year. There were no automatic increases in those days—nor did income taxes reach down to us peons. A Brigadier General's increase is compared to a GS-15, should be compared to a Colonel's pay.

Furthermore in a retention problem, if an individual has but one day of clear military service, no matter where, and comes into the civil service, he has retention rights beyond those of a 30 year career civilian employe in the same work classification. We, as civilians, also receive overtime on a graded scale beyond 8 hours per day, though in my class it is far below my regular pay scale, while the military are expected to serve 24 hours per day, 7 days per week, as a result of their peculiar military status.

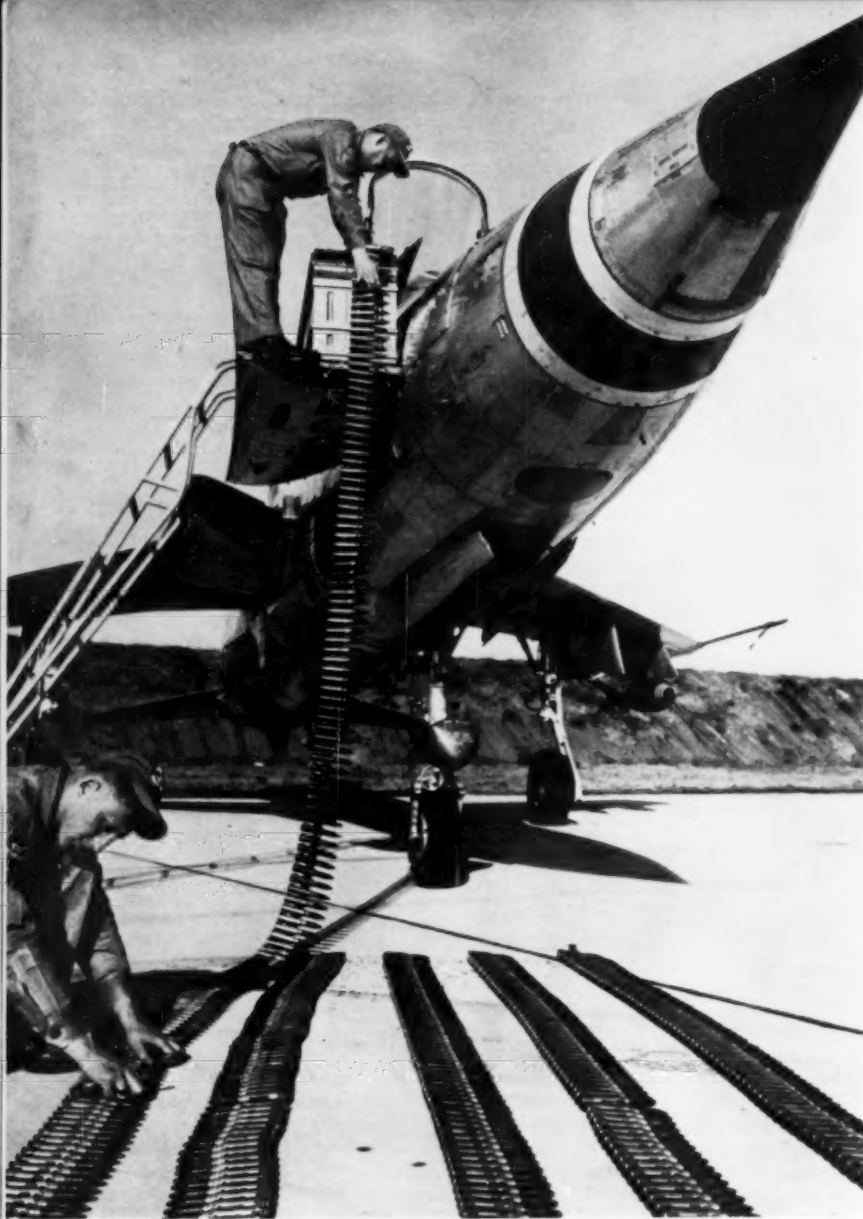
These are not gripes. I can understand the problems, particularly since I have been both. There are inequities on both sides, but this country exists for civilians—the choice is open for one to enter the military or civilian service. At the same time there is no monopoly on brains or talent in both categories. The addition of a stripe or bar does not give one additional talent or ability as some officers I have known attempt to assert. And a number of civilians are promoted to higher grades because they have won a "popularity contest," not because of demonstrated ability in earning a promotion. Moreover the law says that a civilian is qualified for the higher civil service grade after one year's experience in the next lower grade. So the abuse of this leads to fast promotions.

Atop this there are two classes of civilians: the per diem whose wages are regulated by the competitive level of similar jobs on the outside and require no legislation, and the per annum who, like the military, must await the pleasure of the administration and the Congress for the next pay raise.

My point is "let's set the record straight" and have the complete story told by both military and civilian.

Herbert M. Neuhaus

U. S. Naval Ordnance Test Station
China Lake, California



Old concepts and techniques are no longer applicable . . .

IN THE PERIOD of transition from an air defense by manned aircraft, to a mixed aircraft-missile force it became evident that the mission of the Air Force Logistics Command faced substantial change. Also apparent was that change would call for knowledges and skills not possessed by the 150,000-man work force.

Concepts and techniques developed to support large numbers of aircraft were, in many respects, no longer applicable. The situation was further complicated by the development of highly sophisticated systems and hardware requiring maintenance and support capability far in advance of previous requirements.

Criteria established for the new mission includes: (1) making use of the extensive reservoir of skills already developed at considerable cost in time and money; (2) obtaining the maximum benefit of the "transfer of skills" factor in order to reduce training time and costs; and (3) providing for the career continuity aspects of employment in the Federal Service.

Most exacting of the major steps involved in the retraining and skills conversion program is the identification and projection of new and advanced personnel requirements. Often the equipment to be supported and the facilities to be used are still in the research, development, or test phase. Yet, the acceleration of the system development cycle and the sophistication of the system and its support requirements demands that no time be lost in developing the needed personnel capabilities.

Possibly, the most important of several actions taken to resolve the problem has been the extension of the USAF Qualitative Personnel Requirements Information Program (QPRI) to include the civilian personnel require-

The story behind Air Force's retraining program and how it is

Preparing

ment of the AFLC depot level maintenance and area support mission.

The program has been further revised to reflect the quantitative as well as the qualitative factor, gaining the major advantage of receiving personnel requirements information on new equipment and systems from the manufacturer—soon enough to provide the lead-time urgently needed for training purposes.

"Training by technology" is a meaningful development that came along rather early in the evolution of the retraining and skills conversion effort. By directing training and development efforts to the technology itself, the continual updating of skills and knowledges is geared to state-of-the-art advancements.

The conventional practice of developing skills and knowledges for a specific aircraft system is no longer adequate. It restricts retraining to the level of art reflected in the system or equipment involved.

The Concurrency Concept

When technological progress was rather slow and "families" of aircraft were developed one after the other, there was no major problem involved in updating work force skills. Most needs were normally met by on-the-job training programs. In some cases an orientation or familiarization course would be required.

With the advent of highly sophisticated air, space craft and missile systems, the training problem became tremendously complex. Better selection of trainees, improved teaching materials and techniques, plus the "training by technology" concept, made it possible to cope with the situation.

Further progress is now assured since Headquarters USAF began work on the

"concurrency in systems development" concept. This envisions the concurrent planning, programming and development of all components of a system, including the personnel requirement. AFLC makes contributions to this effort, the end result being the Air Force Systems Management program.

A uniform procedure has been established in AFLC to implement this program and provide for total time-phased training support for each system. Responsibility for developing a weapon system training document and for advancing the training program has been placed with the installation which holds prime responsibility for the overall management of the training program on a command-wide basis.

The program provides for the identification of the personnel training requirement of the system; the time-phased planning of training geared to production and support planning and program documents; and the evaluation of training accomplishments. It specifically identifies personnel requirements by type and level in ample time to develop the required skills. The result is added assurance that production goals will be met.

Training and development programs have been designed or revised to meet needs as they are identified. Typical is the action taken in updating the Apprentice Program. Some apprentice courses have been placed on inactive status; those requiring updating have been revised and new ones developed to produce skills not already in existence.

A uniform command-wide program was instituted to provide for the continued development and updating of electronic skills, consistent with the "training by technology" concept. It contains guidelines for the development

of skills necessary at each level from helper through journeyman.

In addition, the program provides for development of advanced skills in the systems mechanic, systems analyst and supervisory positions. AFLC's 1200-hour "Fundamentals of Electronics Course" has been completely revised to provide the basis for the program.

The Unified Approach

With the evolution of advanced weapon and communication systems, the reliability of operation has taken on increased importance. A striking example of this centers around the guidance components of ballistic missile systems. Most of the hardware involved is of advanced or new design and little is known of its characteristics and support requirements. Consequently, thorough research, planning and development of its personnel requirement was needed.

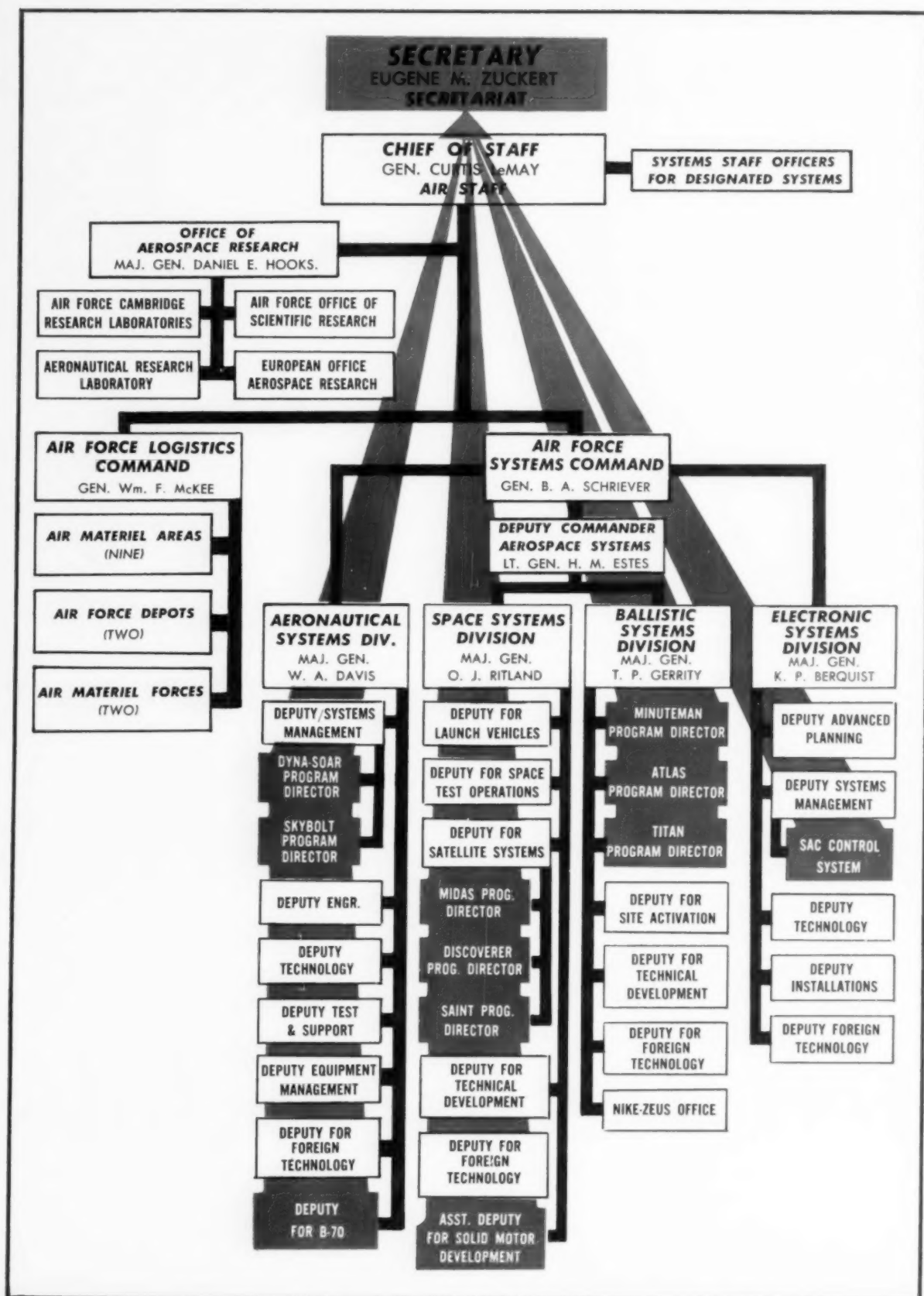
A unified approach was made to the problem, taking in all phases of personnel administration. Included were:

- Research and development of classification and qualification standards for a total of 21 series of positions new to the Air Force Logistics Command.
- A study to determine wage rates for each of the positions.
- Development of a recruiting and placement program (internal and external) to staff the 1450 positions.
- Implementation of a training program to produce the skills and knowledges needed.

To insure uniformity and quality of the total Air Force training program in the inertial guidance area, development and design were accomplished in conjunction with the USAF Air Training Command. The program in-

(continued on page 45)

Men for New Jobs



An Eight Month Report On How **RED-LINE** *Air Force's New Reorganization Is Working In Daily Practice*

AFTER ALMOST eight months of shaking down, the Air Force reorganization seems to be going well. The two major changes in management philosophy which were instituted last April with the creation of the Systems Command and the Logistics Command are proving out admirably in practice.

First, the placing of complete authority for the initial conception, research and development, procurement and production of new weapons under one authority, the Systems Command (AFSC) has met approval at all levels. The single manager philosophy also is being carried on successfully at the working level in AFSC for complete authority over, and responsibility for, each weapon system has been placed with one officer, designated the Program Manager. Most observers feel that the Program Managers have been given both the resources and authority needed to carry out their mission which is to deliver a combat-ready weapon system to the operating commands. The Logistics Command then has the responsibility of supporting the operating units.

The second major management change is the relatively large scale use of abbreviated, quick response decision-making channels. Certain weapon and equipment development programs, of unusual importance, have been given a special priority and are called "designated systems" or "red-line systems."

Under the new set-up the Program Manager of a designated system has the prerogative to by-pass the normal chain of command entirely and to go directly to the Secretary of the Air Force with urgent problems.

This authority given to the eleven program directors is similar to the power given to Gen. Schriever during the early period of Air Force ballistic

missile development and to Vice Admiral William F. (Red) Raborn when he was assigned the task of developing a fleet ballistic missile (Polaris).

General Bernard A. Schriever, Commander of AFSC, has been especially interested in seeing that the red-line system works and that his headquarters is by-passed when the designated Program Managers deem it necessary. Gen. Schriever became a strong adherent of the abbreviated decision channel when he was the first Air Force officer to use one during his tenure as the Commander of the Ballistic Missile Division. In that post, with the aid of his direct channel to the Secretary, Schriever set the Air Force's best record in low lead time development of modern weapons in the Atlas, Thor and Titan programs.

Reinforced Confidence

The Navy's success in its Polaris development has also reinforced the Air Force's confidence in its new management set-up. Admiral Raborn, Polaris development director, had a direct line to the Secretary of the Navy and he enjoyed complete control over all of the resources needed to do his job.

Today the Air Force is faced with a vastly more complex equipment problem than the one which existed several years ago as the services began the development of the ballistic missile. Ever-expanding technology has brought a wide variety of sophisticated aerospace weapons within reach. For at least two years it has been generally believed within the Air Force that there was no hope of bringing any of the new weapons quickly and effectively into being without using the program management system and quick decision channels. This was the main reason behind the Air Force reor-

ganization and the abolishment of the old Air Research and Development Command and Air Materiel Command system in which there was a fuzzy and overlapping break in authority over weapon systems. ARDC conducted research and development and at some hazy point when a weapon entered production the AMC took over. Creation of the Systems Command eliminated this situation.

Currently there are more than 60 Program Managers scattered through the various divisions of the AFSC. They have charge of development ranging from helicopters to the most sophisticated bomber penetration equipment to space systems. Eleven of the programs are judged to be especially critical and have been "designated" to use the red-line channel. These red-line programs are: the Minuteman, Titan, Atlas, B-70, SAC control system, Midas early warning satellite, field booster development, Dyna-Soar, Skybolt, Discoverer, and the automatic satellite rendezvous and inspection system formerly called Saint.

In practice the red-line system works approximately as follows. When the Program Manager does not have time to go through regular channels to prevent a situation which will throw him off schedule he contacts his Systems Staff Officer (Systo) in Washington on the Air Staff. This officer then arranges an immediate conference with the appropriate member of the Secretary's staff. If these two men cannot arrive at a satisfactory answer to the problem it is then presented to the Secretary and the Chief of Staff jointly. Gen. Schriever or his representative usually sits in on these deliberations for the AFSC headquarters is notified when the red-line is in use and briefed on the problem at hand.

Usually it has taken one to two days



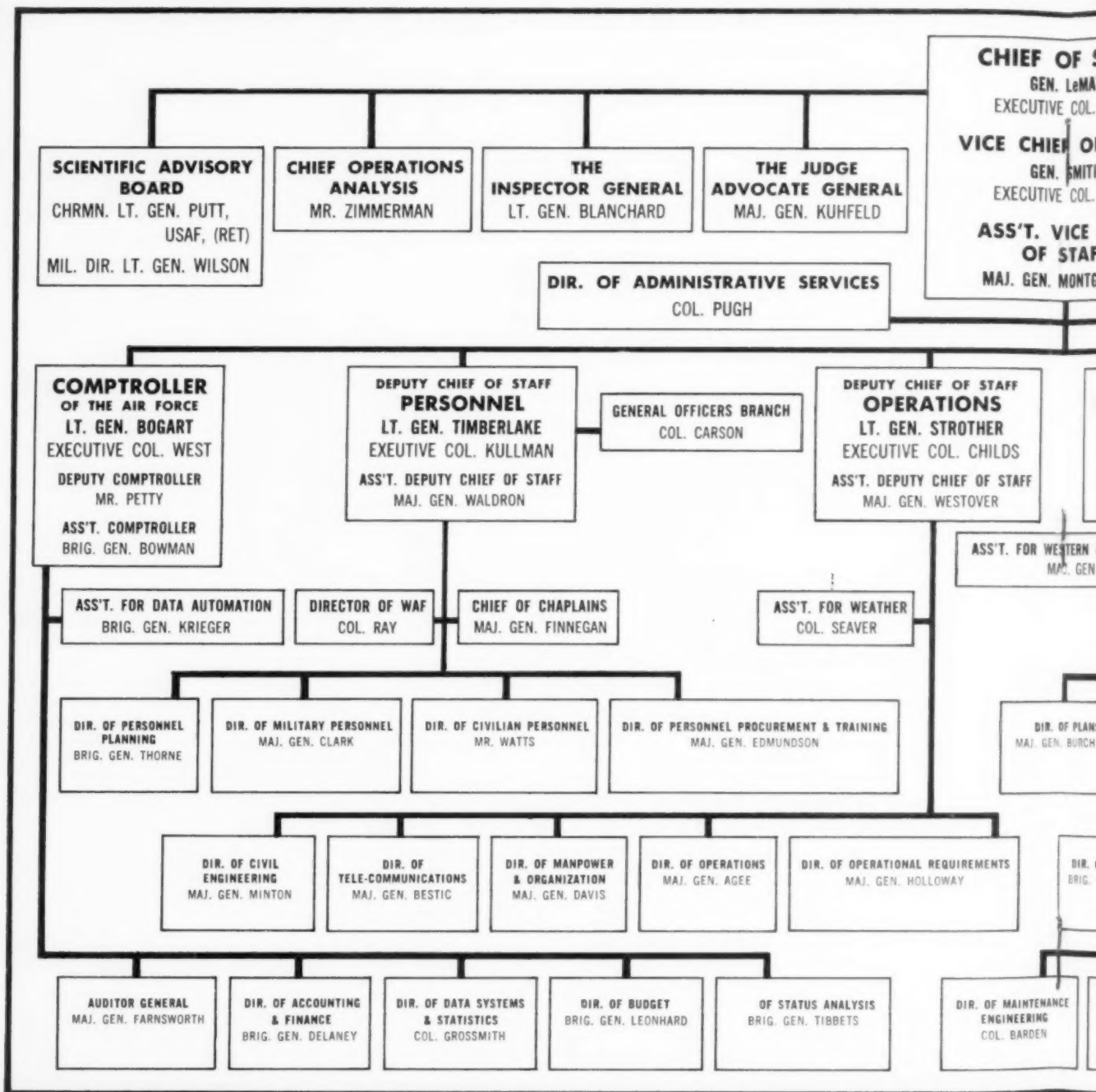
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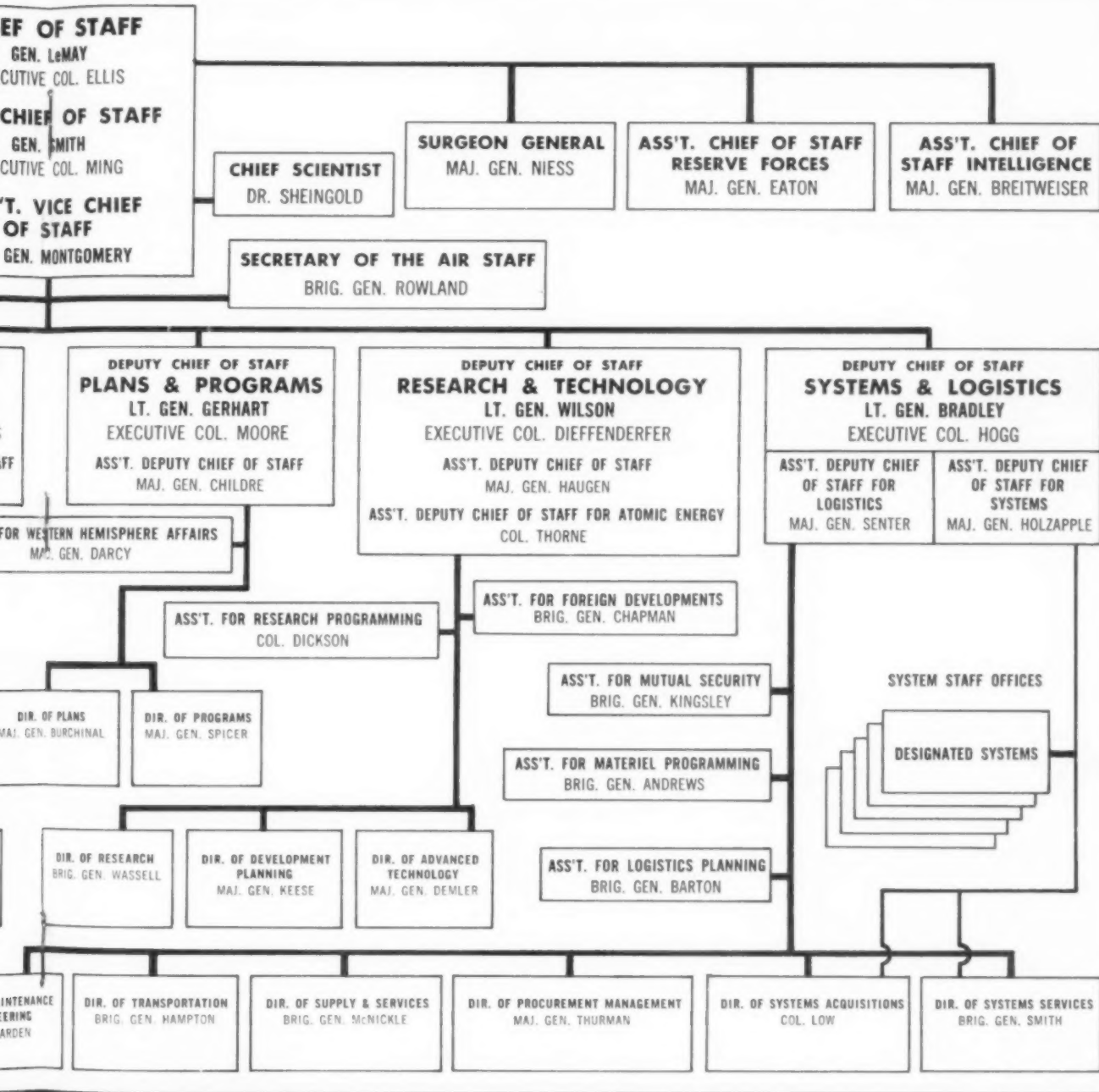
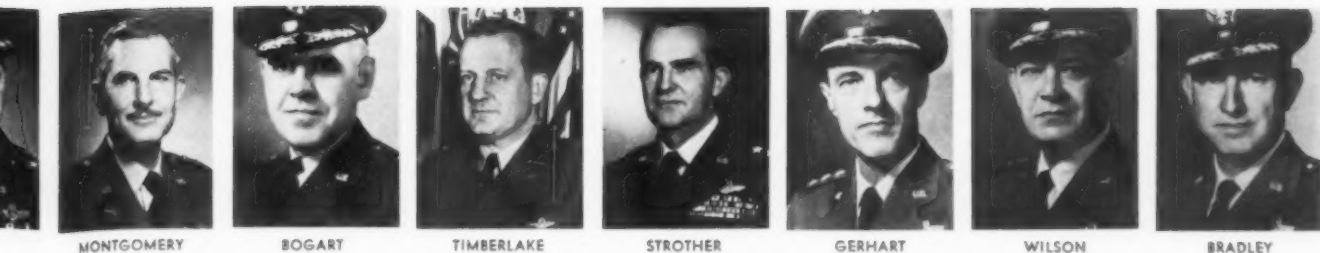
The Air Staff

Dept. of the Air Force



SMITH





to get answers via the red-line compared to many days and possibly weeks through the command channels which weave through any large organization. It has taken a number of months to get the red-line system working to best advantage. To keep from clogging up the management machinery in the Secretary's office, guidelines have been prepared recently for the Program Managers. The guidelines summarize past experience and instruct the managers on the type of problems they should bring to the top level. The object is to keep the red-line answer time to two days or less.

One important benefit of the Air Force reorganization is to allow a relatively easy compliance with the budgeting philosophy of the new Administration. Mr. Charles J. Hitch, Assistant Secretary of Defense (Comptroller), intends to operate as nearly as possible with the weapons system budget concept. Under this concept all of the

Air Force Station, Tenn.; AF Flight Test Center, Edwards AFB, Calif.; AF Special Weapons Center, Kirtland AFB, N.M.; AF Missile Development Center, Holloman AFB, N.M.; and the Rome Air Development Center, Griffiss AFB, N.Y. AFSC also has operational control of the vast ICBM site activation program.

The basic business of AFSC, the management of weapon development and production, lies with four of its six divisions, the Space Systems Div., the Ballistic Systems Div., the Aeronautical Systems Div. and the Electronic Systems Div. The test centers and the remaining two divisions support this weapon management effort. The Medical Div. provides human factor criteria and is intimately involved in the development of manned systems from conception through final testing. The creation of the Foreign Technology Div. has given technical intelligence greater stature and importance than it

ever satellite series, Blue Scout solid rocket, Midas, Saint, Vela Hotel system to detect nuclear explosions in space, satellite control systems, Dyna-Soar booster, Centaur rocket.

Ballistic Systems Division responsibilities include: Minuteman, Titan, Atlas, ground wave communications systems, advanced technology for ballistic missiles such as preprogrammed warheads.

Systems managed by the Aeronautical Systems Division include the Dyna-Soar, advanced air-breathing engines, Skybolt, air-launched ballistic missile, B-70 bomber and the C-141 turbofan powered cargo transport.

The Electronic Systems Division has the urgent responsibility of creating a single Air Force wide communication system that will be useful when space operations begin. Instant response to reconnaissance information and other intelligence is one of the requirements of this system which must be truly global. In addition ESD has the responsibility for numerous terrain avoidance systems for low-flying supersonic vehicles, bomb-nav systems and air-borne surveillance equipment.

While the Logistics Command no longer figures in the command structure for these weapon and support systems, its personnel closely monitors and advises on all development and production. The objective is to have an economic and workable logistics system for each weapon as it is turned over to operational units. Most new weapons will require new logistics concepts.

One of the major objectives of the Air Force reorganization was to make certain that research was not subordinated to development and production. This was achieved in large part by giving the Office of Aerospace Research equal status in the table of organization with both the Systems Command and the Logistics Command. Maj. Gen. D. E. Hooks, Commander of OAR, reports directly to the Chief of Staff, as does Gen. Schriever and Gen. McKee.

OAR is responsible for all of the Air Force basic research work as the portion of the applied research as well. In the applied research area it supports some of the development projects managed by the Systems Command. There is no limit to OAR's technical and scientific interests, but the vast majority of the projects funded by the office relate to some weapon system, even though it may be a very hazy idea at the far edge of technical thinking.

The shake down process is still in progress for the Air Force's new organization. But at this point the general consensus in the military and industry seems to be that the change is a good one which will produce even better results in the future.



expenses connected with the development, production and operation of weapons would be charged to one account. This would include military personnel salaries, operation of test facilities, training costs and similar expenses which are now carried as separate budget items. The ultimate objective is to assign a cost effectiveness rating to each weapon system.

The Air Force's move in making one office completely responsible for each weapon system through its entire development and production life makes this sort of bookkeeping infinitely easier than in the past.

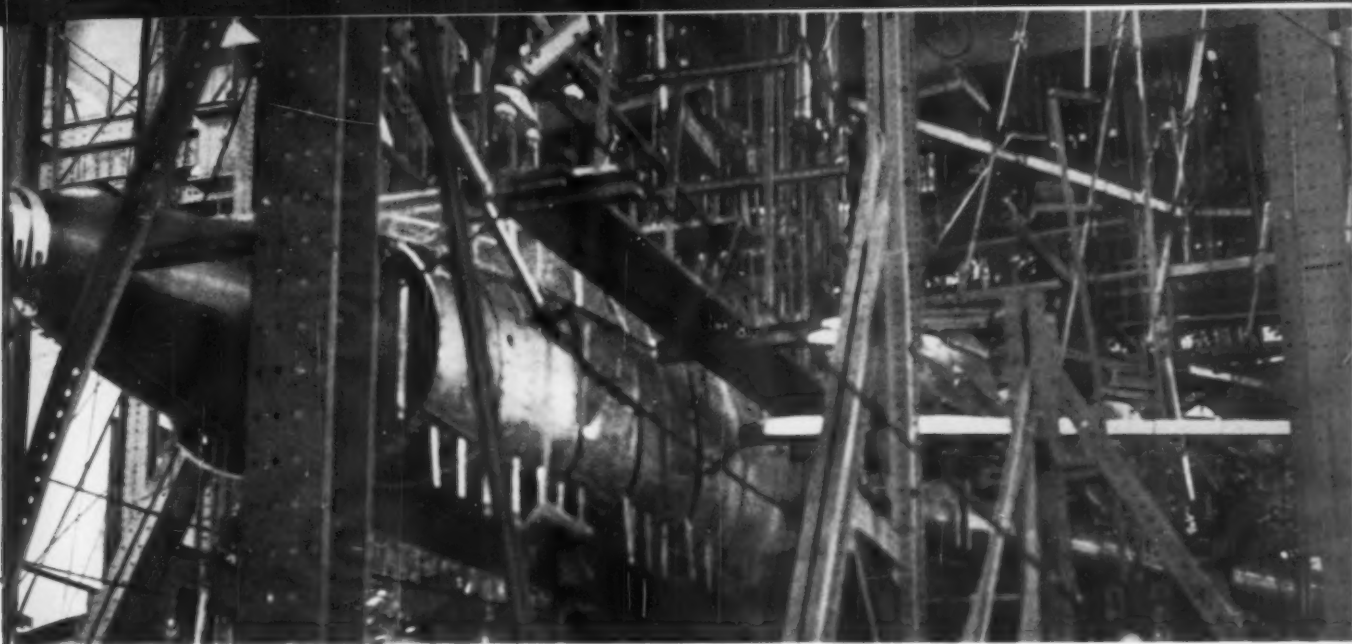
The creation of the Systems Command has broken many Air Force precedents. Never has so many resources and so much authority and responsibility been concentrated with one commander. AFSC now spends more than one-third of the annual Air Force budget and as time goes on this figure is bound to increase.

In addition to its six divisions AFSC operates seven large test centers, which are: The AF Missile Test Center, Patrick AFB, Fla.; Air Proving Ground Center, Eglin AFB, Fla.; Arnold Engineering Development Center, Arnold

has enjoyed in the past. Primary mission of this division is to provide a wide and detailed picture of technical developments abroad, and especially in the Soviet Union.

Allocation of weapon projects among the four development divisions has not followed any clear prearranged plan. It has been determined largely on the basis of the current situation in each division, the availability of manpower etc. For instance, the new solid rocket responsibility has been assigned to Maj. Gen. Ritland at the Space Systems Div., while the liquid booster development responsibility lies primarily with Maj. Gen. Gerrity and the Ballistic Systems Div. There is no natural split of interest and responsibility between these two divisions and there probably will not be within the foreseeable future. To make certain that their efforts are coordinated rapidly and that no time is lost in jurisdictional uncertainty, both division commanders report directly to an AFSC Deputy Commander. This officer, Lt. Gen. H. M. Estes, has the responsibility for coordinating the programs of these two divisions.

Specific responsibilities of the Space Systems Division include: the Discov-



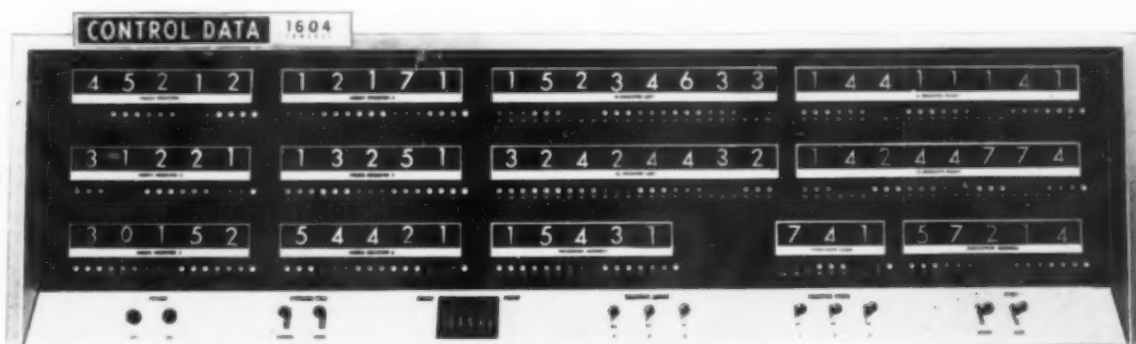
CONTROL DATA 1604: KEY TO FLIGHT SIMULATION

From the early days at Kittyhawk to the present, structural design of aircraft has kept pace with increases in speed and altitude. So it is with testing. Whereas structural testing was once determined largely by static methods, today's flight environments demand the effects of time-dependent thermo-mechanical loads.

To aid engineers in testing structural design of aircraft and other flight vehicles is one of the tasks of a Control Data 1604 Computer at the United States Air Force Aeronautical Systems Division, Wright-Patterson AFB, Ohio. As an integral component part of the Structural Test Facility "High-Speed Data Acquisition and Processing System" it receives tremendous volumes of data

during structural integrity testing, and reduces and analyzes data involving all or part of a given "mission." Under "real-time" test conditions, the 1604 performs all necessary computations to process, display, and record these data.

Thermo-mechanical test results can now be analyzed in minutes rather than days following a test; thus, necessary design changes can be made before the vehicle becomes operational. The speed to execute 100,000 instructions per second, the built-in precision, the large storage capacity of the 1604 Computer are today being used to aid man in providing safer, higher-performance flight vehicles.



CONTROL DATA
CORPORATION

COMPUTER DIVISION

501 PARK AVENUE, MINNEAPOLIS 15, MINNESOTA

After more than a decade of studies, managers have come up with what looks like a probable solution to . . .

The Navy's Communications Problems



Management of shipboard communications centers has improved vastly over that of the pre-WW II and Korea eras . . .

WHAT DOES a military management organization do, faced with rising operational commitments, an aging plant, a level budget and low personnel ceiling?

Naval Communications found itself in just such a position in the late 1950's when the demand for increased channels to serve new command and control concepts on point-to-point circuits and the growing need for ship-shore circuits had to be faced and solved with limited resources.

The Director of Naval Communications had exercised operational and management control over the Naval Communication System for many years, utilizing assigned officers within the office of the Chief of Naval Operations to perform day-to-day management functions and budget planning. The system consisted of some 15 major facilities throughout the world, each equipped with broadcast and ship-to-shore facilities and interconnected by a point-to-point system.

Several challenges confronted the then existing management system. Foremost among these was the collection of definitive information regarding system operational performance for evaluation. Without such data it was impossible to pinpoint deficiencies in operations, techniques, equipment, and installations. Where deficiencies did exist, they were known in general terms. They did not provide adequate and firm justification for corrective budget support. Lack of more definitive information on performance similarly hampered personnel planning and distribution. While shortages at various stations were known, the exact nature of personnel problems was difficult to isolate, and the effects of personnel shortages on performance could not be evaluated. In the field of detailed budget preparation and justification, and the direction of expenditure of allocated funds, assigned personnel of the Director were placed in the position of having to perform day-to-day management functions while concurrently developing CNO broad policy in the many aspects of naval communications, both ashore and afloat. Under such circumstances, neither policy nor management could get adequate attention and then intermingled duties tended to hinder action in both areas.

The Naval Communication System

Recognizing the need to separate day-to-day management and operational control of the Naval Communication System from the policy-making group in the CNO's office the Director of Naval Communications undertook establishment of the U.S. Naval Communication System Headquarters Activity in July 1959, and delegated to this activity, general management functions for the Naval Communication System. The activity, under an officer in charge, is located at 3801 Nebraska Avenue, N. W., Washington, D. C., and consists of branches charged with system operations, readiness, facilities and installations, personnel administration, comptroller, and supply functions. It maintains close liaison with the office of the Director, Naval Communications, keeps advised of policy and assists that office, as necessary, in support of budgets and other detailed information required on the world-wide activities of the Naval Communication System.

At the time of the establishment of this activity, Navy was in the early stage of implementing conversion of its point-to-point circuits to 16-channel on-line encrypted operation, implementing multiplex ship-shore operations at all major stations, providing certain services to the seaward extensions of both the Early Warning Barrier and the Pacific Missile Range, and implementing the establish-

ARMED FORCES MANAGEMENT

ment of several new stations, notably the stations at Cutler, Maine, and Iceland. These changes created large problems in funding, personnel and equipment replacement. The subsequent inclusion of the long-haul point-to-point facilities into the Defense Communications System (DCS), under the operational control and supervision of the Chief, Defense Communications Agency, added new lines of control and responsibility for the Headquarters Activity.

The Headquarters Activity, in its first year of operation, developed definitive information on the system through an extensive and searching analysis effort, permitting limited funds and personnel to be utilized to maximum advantage. An orderly and effective transition of point-to-point channels into the Defense Communication System (DCS) was accomplished. A valuable detailed picture of areas of operational deficiencies, personnel placement and management problems of each station was obtained by management. Data were developed on circuit performance, traffic handling times, causes of circuit failure or malperformance, etc. On-the-spot inspections with continuous follow-up, and a detailed personnel utilization report were inaugurated. Programs were established and successfully justified through the use of incisive program objectives to improve basic operations; high powered and more flexible transmitters, improved receiving equipment, and modern and better configured antennae.

The Complicated Task

These management efforts by the Headquarters Activity have served to indicate and pinpoint deficiencies and problem areas. However, the funding has remained essentially level and little success has been realized in obtaining additional personnel. This latter difficulty stems from the low manning level in nearly all other segments of the multi-missioned Navy from which new personnel could be drawn. For the former, the System has experienced, as have most other organizations, a steady cost of living rise, primarily in the area of maintenance, and in the introduction of new and more complex equipments.

The task, therefore, has been one of developing a system for the most judicious use of the assets available. To this end, an intensive study of two representative communications stations, Norfolk and Washington, was undertaken. Each of their many tasks were categorized and personnel standards were established. The task was complicated, and remains so, because among the major stations, there are marked operational differences, as well as differences in physical layout, induced by the requirements of individual operating environments.

A Navy Communications Station

Any management system must be judged by its results. How has the Naval Communication System fared with its increasing commitments and limited resources? This, perhaps, can best be shown by describing a typical large Naval communication station and what specifically gets managed and is accomplished.

Such a typical station could be the U.S. Naval Communication Station, Washington. Basically, it is composed of a receiver and headquarters site located at Cheltenham, Maryland, and a transmitter site located at Annapolis, Maryland. Public works, supply, messing, electronic maintenance, etc., are operated at each site under the commanding officer. Operation and maintenance funds are allotted to the commanding officer on a fiscal year basis

apportioned quarterly by the Headquarters Activity to support the total effort of the station. Personnel allowances, officer and enlisted for both operations and logistics, are established by the Bureau of Naval Personnel, based on recommendations of the commanding officer and the Headquarters Activity. Given these two fundamental items, the commanding officer must operate his station so that his mission is fulfilled.

The Naval Communications Station, Washington, operates six fleet broadcasts, three multi-channel circuits to the fleet and nine multi-channel point-to-point circuits. Excepting the broadcasts, all have on-line crypto capability. In addition, the station operates a consolidated cryptographic facility for activities in the Washington area, an automatic switching center and classified and unclassified message centers. The plant account value has grown from \$17,279,967 in 1960 to \$18,473,000 in 1961. This includes real estate, buildings, and equipment. Message handlings have increased 16% over 1960, with 1,721,199 message handlings (April 1961 alone showed an increase of 151,284 message handlings over April 1960). The FY 1960 budget totalled \$1,491,000. The FY 1961 budget totalled \$1,420,000. This shows a reduction of \$71,000 in overall operating and maintenance costs with an increased plant to maintain and a marked increase in traffic to handle. Personnel manning has remained about even, 1960 compared to 1961. In 1960 there were 50 officers, 549 enlisted and 163 civilians on board the station. In 1961 there has been a total of 60 officers, 541 enlisted, and 168 civilians. Again, increased operations and plant maintenance have been accomplished, although a decrease in enlisted manning and a comparatively level manning in officer and civilian personnel have been experienced.

The Race Against Obsolescence

The growth at Naval Communication Station, Washington, is typical of what is happening throughout the system and is indicative of the mounting requirements for communications throughout the defense structure. The total number of channels on ship-shore and point-to-point circuits has been nearly tripled. Multi-channel broadcasts will be operational in the immediate future. A world-wide single sideband voice system has been installed and made operative. The world's largest very low frequency transmitter station has been placed in operation. A new communication station has been established in Iceland. Other facilities have been augmented. Great increases in capability have been accomplished with a relatively small increase in overall maintenance costs.

On the other hand, thorough justification of naval communications needs has resulted in an incremental, although by no means fully adequate, increase in procurement funds for modern equipment. The race against obsolescence has not been won. Vigorous management of the essentials; i.e., men, money, and a pin-pointing of equipment and operational deficiencies, coupled with careful presentation of budget needs, has provided the only means by which the basic objective has been met.

The Navy has now developed the management of its communications to the optimum of existing assets and funding. It now casts a somewhat apprehensive weather eye on the still-mounting requirements which mark this age of increasing speed and power of the weapons systems and operating forces, for the level of communications capability in this day and time is also the level of fighting effectiveness. ■

Divisional Changes . . .

Army's New Look For '62

To keep step with changes in the world situation, President Kennedy ordered a reorganization similar to this . . .

by Maj. R. J. Winfree, Jr.

IN HIS SPECIAL budget message delivered to Congress on 25 May 1961, President Kennedy stated that he was directing the Secretary of Defense to undertake a complete reorganization of the Army's divisional structure.

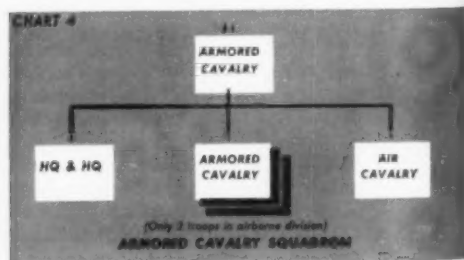
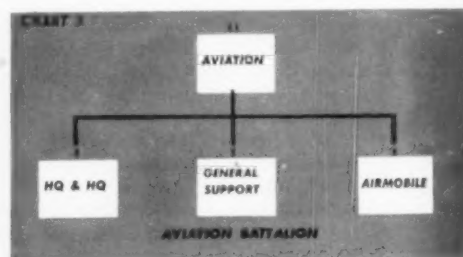
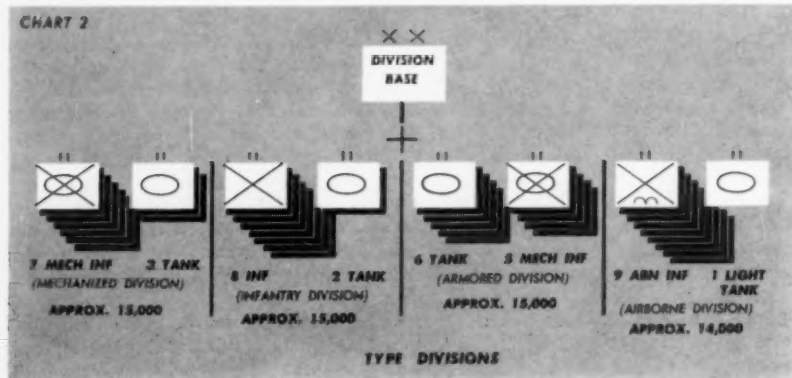
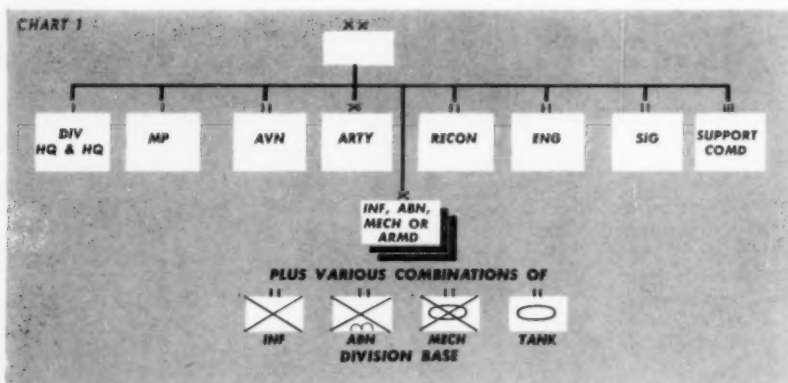
Army feels that its current infantry, airborne, and armored divisions require evolutionary and progressive modification to keep in step with changes in the world situation—in the nature of modern war and in weapons and equipment now available or soon to become available. The need for a mechanized division arose from the requirement for increased battlefield mobility and increased protection for personnel on both the nuclear and non-nuclear battlefield.

This reorganization which is scheduled to begin early in 1962 for active

Army units will produce four types of divisions: infantry, airborne, armor and mechanized.

All of these divisions have a common base, including command and control elements, reconnaissance elements, combat support elements and administrative support elements. Included in the command and control elements are three brigade headquarters capable of controlling the tactical operations of attached maneuver battalions and appropriate combat support and administrative support elements. (See Chart 1.)

Any of the four type divisions, infantry, airborne, mechanized or armored may be formed from this common division base primarily by varying the type and number of maneuver battalions assigned to the divisions. The number and type of the attached bat-



talions are not fixed but may vary to fit the situation. A division may consist of from six to fifteen battalions.

The armored and mechanized divisions will be highly mobile, armor protected units. The infantry division will not be completely motorized. The number of vehicles in the infantry division will be kept austere to retain its strategic mobility where air and sea lift are a premium, and to retain its cross-country mobility in terrain where foot-mobility is essential. The division is capable of being either fully motorized or mechanized when required. The airborne division will of necessity be light and air transportable. (See Chart 2.)

The combat maneuver battalions are as near the same in organizational structure as possible, consistent with their individual roles. All are administratively and tactically self-sufficient. All battalions are of essentially one combat arm, i.e., armor in the tank battalion and infantry in the mechanized and infantry battalions. Tactical tailoring of a combined arms battalion by cross attaching companies, proven so effective in our World War II armored divisions, is an inherent capability. A look within these battalions shows them organized with a headquarters company and three line companies. The bulky battle group organization of a headquarters company, 5 line companies, and a support company has been eliminated. Not only has this improved the commander's span of

control but it has returned command positions to infantry lieutenant colonels—a much needed action in progressive development of leadership and command. Added emphasis has been given to the capability for chemical warfare by assigning chemical branch officers and non-commissioned officers to all headquarters down to and including these battalions.

Aviation units in these divisions have been expanded from company to battalion size. The general support company is now similar to the current aviation company in divisions but aircraft formerly in support of combat and support units have again been made organic to these units. A significant addition to the aviation battalion is the air-mobility company. This company has the capability of transporting one complete infantry or dismounted mechanized infantry company. (See Chart 3.)

The armored cavalry squadron is the division's reconnaissance unit. Its significant change is the addition of an air cavalry troop whose mission is to extend by aerial means the reconnaissance and security capabilities of ground units. It will be capable of engaging in offensive, defensive, or delaying actions and can seize or dominate lightly defended areas or terrain features. (See Chart 4.)

For the airborne division the engineer and signal battalion and cavalry

squadron are all slightly smaller and more lightly equipped.

The division artillery for the infantry, armored and mechanized divisions is portrayed in Chart 5. The artillery for the armored and mechanized divisions is self-propelled while that for the infantry division is motorized.

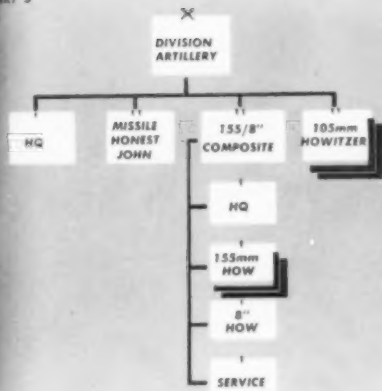
The artillery for the airborne division is slightly different as shown on Chart 6.

Administrative support for the divisions is provided by a division support command organized on a functionalized basis to provide supply, field maintenance, medical support, and administrative services to the division. While the composition of the support command is practically identical for all divisions, the equipment and personnel in the supply, transport, and maintenance area varies for each type division depending upon the type and numbers of maneuver units. (See Chart 7.)

Not only is this functionalization of maintenance, supply, and transportation unique for these divisions but the administrative company will now carry a large portion of the division special staff not required at the main command post. These special staff sections now located in the administrative company are: Inspector General, Information, Chaplain, Finance, Staff Judge Advocate, and Adjutant General.

(continued on page 50)

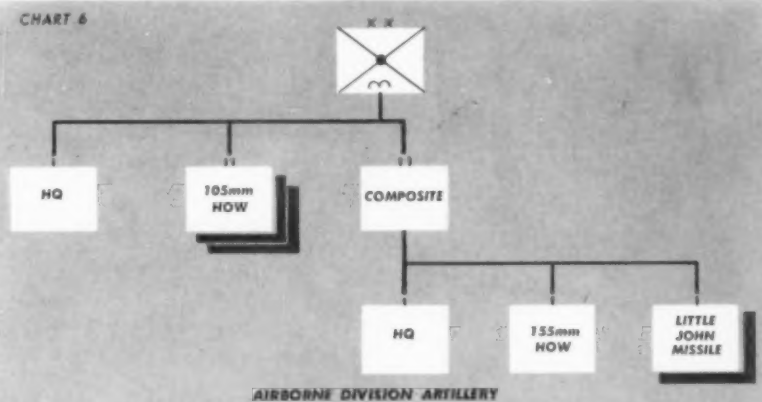
CHART 5



DIVISION ARTILLERY

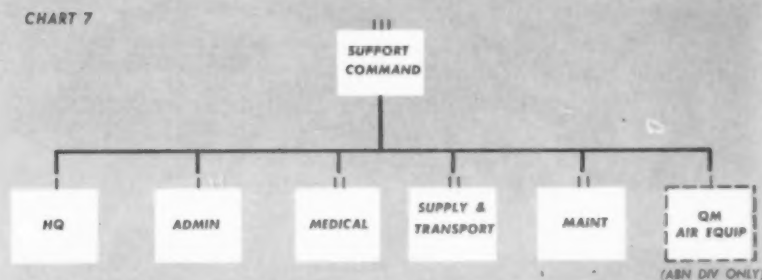
INFANTRY, MECHANIZED & ARMORED DIVISIONS

CHART 6

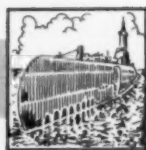


AIRBORNE DIVISION ARTILLERY

CHART 7



DIVISION SUPPORT COMMAND



NATO Forecast

French A-Bombs For Mirage-IV In Production

A-bombs droppable from the French Mirage IV bomber are in production without serious difficulties. Tests of the Mirage IV prototype are near completion, and Australian interest is building some export hopes.

NATO V/STOL Competition

Less than twenty of the contemplated fifty designs for a V/STOL tactical fighter will be offered before the December 31 deadline. Most of the designs are joint projects by U.S. and European firms.

A similar contest organized by NATO for STOL cargo planes is being closely watched by the FAA. Project data was to have been submitted by November 15.

NATO Reevaluates UK's Costs

The North Atlantic Council is considering how Britain's NATO allies can assist here in meeting the foreign exchange costs of the British forces stationed on the continent.

Britain's overseas military expenditure is currently running at around \$650 million a year (of which about \$182 million is accounted for by the British Army of the Rhine) which adds to her already acute balance-of-payments problem.

Prior to the Berlin crises, Britain was warning West Germany that unless the Germans helped pay for more of the cost of maintaining British troops on German soil, the British might reevaluate their whole policy, and even withdraw their troops.

The issue has now come to a head again because an overall reappraisal of U.K. long-term defense policy is under way, brought about because: (1) the five-year defense policy instituted by Duncan Sandys in 1957 is coming to an end, and a new policy based on political, military and economic forecasts for a period to the mid-1960s is essential; (2) the deterioration the U.K. balance of payments calls for a reconsideration of the whole concept of keeping big garrisons overseas; (3) the increasing complexity and cost of modern weapons, together with the general upward trend of military costs are exerting pressure on the government's efforts to keep the defense bill down.

Franco Wants More Dough

Military experts familiar with Spanish policy interpret recent remarks by Generalissimo Franco to mean that the Spanish leader feels world events have raised the importance of Spanish collaboration in the NATO effort.

Having recently asked for a new agreement on U.S. aid, it is believed that Franco's conditions for continued cooperation will include a substantial U.S. contribution towards strengthening the Spaning economy and modernizing Spanish industry.

British Airmen Use Arresters

The British Air Ministry has decided to equip more airfields used by the RAF in the United Kingdom with runway arrester barriers.

Some 70 RAF aircraft have been successfully arrested since introduction of the barriers in 1958.

RAF Now Favors AS-30

The Royal Air Force is reportedly to be leaning toward acceptance of the AS-30 air-to-surface over its competitor, Bullpup.

The RAF support should be a boost to France's efforts to get the AS-30 accepted by NATO. The missile has suffered new opposition recently because it reportedly is too heavy for the FIAT G-91, and is heavier than F-104 designers would like it to be.

NATO's "Atlantic" Makes 1st Flight

by Anthony Vandyk

Paris, France—A milestone in co-operation within NATO was reached this fall when the Atlantic patrol bomber made its first flight. Designed for NATO use and manufactured by several of the European NATO countries' industries, the Atlantic is tangible evidence of NATO cooperation.

One of the most remarkable achievements of the Atlantic project is that the aircraft made its first flight less than two years after the design was finally selected. The Atlantic was one of many designs prepared to meet a NATO operational requirement for a replacement aircraft for the Lockheed P2V Neptune. Included in the NATO specification was the requirement that at least two companies in different NATO countries participate in the development and production of the aircraft.

In fact, the winning design—the Atlantic—is being built by companies in five of the NATO countries—Belgium, France, Germany, the Netherlands and the United Kingdom.

The French company Breguet has overall responsibility for the design and development of the Atlantic and is also

handling some of the production as well as final assembly. Breguet is manufacturing the fuselage while another French company, Sud Aviation, is responsible for production of the outer wings. The wing center sections and the engine nacelles are the responsibility of Fokker, the Dutch company. Germany's Dornier is building the rear fuselage and tail units of the Atlantic while the Belgian industry will participate in the Atlantic program at a later stage. Avions Fairey and SABCA are scheduled to build airframe assemblies while a third Belgian Company, FN, together with Germany's MAN will cooperate with Rolls-Royce in supplying Tyne turboprop engines for the aircraft. SABCA and FN are also scheduled to cooperate with Hispano Suiza, the manufacturer of the Atlantic's landing gear. The French Ratier propeller company is cooperating with de Havilland in the supply of 16-foot-diameter propellers for the aircraft.

Details of the radar and armement of the Atlantic are classified but it is understood that the U.S. is making available anti-submarine equipment pending the availability of European-produced items. France's CSF is pro-

ducing some of the radar.

As for armament Breguet says that the Atlantic "can carry all types of weapons stored in the main bay, for example, homing torpedoes, depth charges, atomic weapons, mines, etc.; it also carries underwing pylons air-to-surface guided missiles." Performance of the Atlantic is impressive. The two 6000-ehp Tyne turboprops give the 91,000-lb. aircraft a range of 5000 nautical miles and an endurance of up to 18 hours. Patrol speed is 170 knots and maximum speed is 330 knots. Although the Atlantic has a ceiling of 33,000 feet it will normally cruise at low altitude and at low speed for its main mission—anti-submarine patrol.

Most of the funds for the Atlantic program have come from France, Germany and the Netherlands and these three countries are likely to operate most of the total of over 100 aircraft at a schedule to be built. For the moment firm orders involve 27 Atlantics for the French navy and a classified number (about 30) for the German navy. The first Atlantic prototype started its flight test program on October 21 and two others are under construction.

Trainer May Save \$

Frankfurt, Germany—A means of saving substantial sums of money on training aircraft and support requirements without compromising efficiency is being studied with considerable interest by the NATO air forces.

The method involves use of the CL-41R, an advanced systems trainer aircraft which is being developed by Canadair Ltd. in Montreal for the radar training of F-104G pilots in NATO air forces. Procurement officials in the NATO air forces are extremely interested in the CL-41R since it is priced at half the cost of an advanced trainer and one third the cost of a flying-classroom type trainer. Canadair's fuel consumption studies show that the CL-41R costs \$12.40 per hour compared with \$46.00 for an advanced trainer and \$112.00 for the F-104G. Similarly, a survey of maintenance man-hours per flight hour shows that the CL-41R requires 4 man-hours com-

pared with 21 hours for an advanced trainer and 45 hours for the F-104G.

The CL-41R has the following components interchangeable with those of the F-104G: the NASARR radar system; nose radome and pitot-static boom; inertial navigation system; UHF radio; TACAN; selective identification feature; air data computer; UHF communications antenna system; and standard packages of F-104G electronic equipment. The NASARR monopulse radar system performs the functions of air-to-air search; air-to-air blind acquisition and automatic tracking; ground mapping; contour mapping; terrain avoidance, and air-to-ground slant ranging.

NATO air force officials were recently made familiar with the Canadair CL-41 primary and basic jet pilot trainer, from which the CL-41R design is derived, during a six-week tour of Europe by the prototype. This aircraft, which has been flying since Janu-

ary 1960, has been ordered into production for the Royal Canadian Air Force. It is powered by Pratt & Whitney JT12 (J60) turbojet engine with a normal thrust rating of 2,570 lbs, which gives it a maximum level speed of 475 mph at 30,000 ft. Time-to-climb is 8 minutes to 20,000 ft and the sea-level rate of climb is 3,300 ft/min.

The CL-41R advanced systems trainer has similar performance and the gross weight is increased to 7,870 lbs. If required, greatly increased performance is available by using the 3,000-lbs thrust military rating of the JT12. This gives the CL-41R a maximum level speed of 5.2 mph at 20,000 ft, reduced the time to 20,000 ft to 6 minutes and the sea-level rate of climb is increased to 4,700 ft/min. Wing span of the CL-41R is 36 ft 4 in and the fuselage length is 40 ft 7 in. The limiting manoeuvring load factors are -2.1 to +5.3 and the limiting Mach number is 0.8.



“THE PRESENT system of accountability for property is defective and gives rise to too great a multiplicity of papers.”

Is the speaker Lt. Col. J. I. Gurfein, who, in ARMY for January 1957, wrote that “Property is a Field-Grade Problem?” No, although it could be. For a voice from the historic past, echoing Col. Gurfein on a subject which perennially plagues fighting men, listen to John Gibbon, creator of the Iron Brigade of the Army of the Potomac:

“HeadQrs. 2nd Division - 2nd Corps
Camp near Falmouth, Va. April 30th 1863

“General,

The present system of Accountability for property is defective and gives rise to too great a Multiplicity of papers.

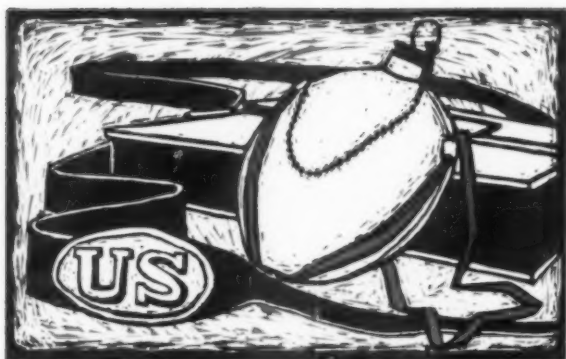
“Every Company in the Service has more or less property worn out, which has to be inspected and condemned by the Division Inspector Gen’l. Under the old system where the number of companies was small, the thing was practicable, but now each Brigade in our large Armies has four or five Regiments and each Division Three Brigades, making from 125 to 150 Cos. Each Co. Comd’r must make out *triplicate* inventories of each kind of property, so that to get rid of a few worthless muskets and a few pieces of damaged clothing or Camp and Garrison Equipage in each Company from 750 to 900 papers must be prepared and examined by the Inspector Gen’l, who has to make from 250 to 300 separate (John Gibbon was turned back in his yearling year at the Point for deficiency in spelling. It is not a record that he was ever deficient in fighting.) inspections and this not once a month or once a quarter but sometimes twice a few days, from the want of care and experience on the part of the Co. Officers, in not including all the property that needs condemnation. In this way the mere labor or preparing for inspection and condemnation becomes interminable, without taking into account the additional invoices and receipts for property turned in for repairs.

“To remedy this defect, I propose that whenever a Company Officer has property which he considers worthless, he make out invoices of it, which shall be endorsed by the Regimental Commander or some Officer appointed by him, certifying to the condition of the property, and then this property be turned over, in the case of Ordnance, to the Division Ord. Officer. In the case of Clothing and Camp and Garrison Equipage to the Brig. Q’r Master’s to be by them brought before the Insp. Genl, for Condemnation, when he has a sufficient quantity on hand; when the triplicate inventories can be made out.

“

“I am General
Very Respectfully Your Ob’t Serv’t
John Gibbon
Brig. Genl., Comdg. Div.

ARMED FORCES MANAGEMENT



(Now, the bureaucratic brushoff)

"To Brig. Gen'l S. Williams
Ass't Adj. Gen'l Army of the Potomac."

"Quarter Master General's Office
Washington City, June 5th, 1863.

"Gen. L. Thomas
Adjutant General
U. S. A.

General:

I have the honor to acknowledge the receipt of a communication from Brig. Gen. Gibbon relative to the present system of accountability for property . . .

"Gen. Gibbon's plan of relieving company commanders and Inspectors General of the labor of preparing for inspection, and inspecting company property worn out or injured in the public service, would relieve the former from their responsibility for the property in their charge. For the duties and responsibilities connected with this property they each receive a monthly compensation of Ten dollars (\$10-) (See second section of an act approved March 2nd, 1827.)

"It is not necessary under the Regulations that an Inspector General should inspect all property reported unserviceable. Paragraph 1021 Revised Regulations provides that the inspection may be made by Commanding Officers of posts or other separate commands, or by officers specially designated . . . The regimental commander . . . might be appointed to inspect it and make the proper recommendation for its final disposal. (The objection to triplicate inventories by each company is neatly sidestepped.)

"No necessity exists either, for the frequent inspections of property referred to by Gen. Gibbon when troops are stationary. In such circumstances a monthly inspection will be sufficient. More frequent inspection will seldom be required unless the troops are moved. (It is no concern of the QMC that about this time Robert E. Lee might be so inconsiderate as to take the Army of Northern Virginia into Maryland, and make the Army of the Potomac move.)

"Gen. Gibbon's letter is herewith returned.

I am Very Respectfully
Your Obt Servt
M. Meigs, Quarter Master Genl"

"Ordnance Office
War Department
Washington, June 10, 1863

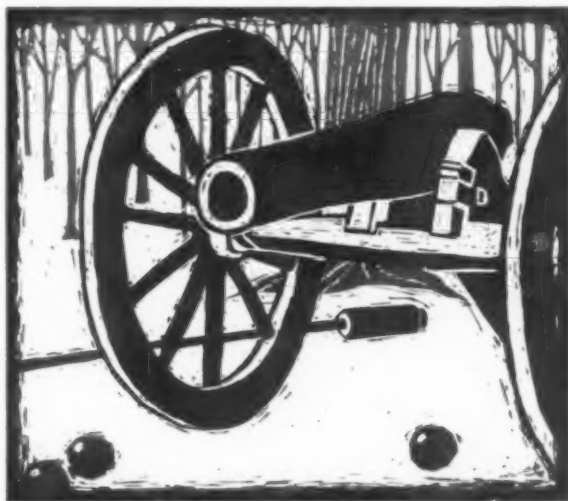
"Br. Genl. L. Thomas
Adj. Genl. U. S. Army

Sir:

Genl. Gibbon's proposed plan for accounting for Company property worn out, or rendered unfit for use, in the public service, has been examined and considered. Besides the objection to relieving company commanders from duties and responsibilities imposed on them and compensated for by law, it is not seen that the proposed plan will facilitate or expedite the work of accounting for such property. The Company Officer, under the existing regulations, has only to make out the inventories and inspection reports combined, on the simple forms, printed and furnished to him, and submit them to the inspecting officer . . . By the proposed plan the Company Officer will have to make out invoices of the worn out or damaged articles, get them certified . . . and then turn over the property, and get receipts for it to serve as his vouchers; still leaving the property to be afterwards inspected, and disposed of, and again accounted for . . . The letter of General Gibbon is returned herewith. (The fact that the combat troops are burdened with too much paperwork which somehow should be eased is conveniently ignored.)

Respectfully
Yr. Obt Servt.
Jas W. Ripley
Br. Genl., Chf. Ord."

Final disposition: to John Gibbon's ACP (i.e. 201) file, where it rests to this day.



Effective Staff

(continued from page 19)

sibly used, it can be as effective as the ancient mariner's sextant. Improperly applied, however, it can lead down the garden path to ruin. It is merely a measuring device. It is the dollar. We must know how to use this measuring device, however. We must be able to relate it to our product or function or it becomes meaningless. How do we do this?

First, we must be knowledgeable in the identity of our data. This data can be found in a voluminous book called the chart of accounts. The cost accountants developed it; we take advantage of their efforts. The document identifies almost everything that occurs in the organization and defines the occurrence. It also forms the basis for valuation, for during the cost process a dollar value is placed on each occurrence. By proper utilization, we can find out what everything costs in the organization and identify this cost to the lowest element in the whole organization. The chart of accounts directs what detailed information is to be collected. The cost department, or some other organizational element, gathers and records all this data as actions occur. This accomplishes for us the information collection function. Every piece of data is collected and converted to a common denominator which can be measured. It does not lose its identity to the dollar, however. We can always relate any bit of information to time, organization, people, materiel, or whatever, through the chart of accounts.

Variance Analyses

The knowledge of what occurred and its valuation in dollars is not all. We can also find out what it should have cost to do these things. We can get these bits of information from a number of sources and relate them to a whole. We can find the labor hours planned and used, the materiel types and quantities planned and used, the departmental and support overhead planned and used. The cost department or another similar agency can convert all these factors to dollars for us. This provides us with a measuring device as valuable as the twelve-inch ruler to the machinist or house builder. It is commonly referred to as a standard of performance. With such a device we can find variances. The pieces of information we must analyze are these variances, that is: How great is the difference between predicted and actual performance?

Variances are merely differences of

actual occurrences from plans, programs or standards. However, their examination begins the analysis of all the data with which we must concern ourselves. We explode actual data and make comparisons with plans, programs, and standards. Where differences occur, we make investigations. We find out the *why's* of the differences. We determine the *what's* that caused them, the *who's* involved, and *where* these things occurred. We also need to know *when* and *how*. This will explain the whole story of the past. The answers to all these questions are merely variance analyses. To make effective use of our time, we must now identify what variances we should analyze in more detail, for at this point many can be disregarded while a few will be extremely important.

Recognizing Variances

Variation is change. In our case, it is change from plan, program or standard. We cannot be concerned with all finite changes, however. We must consider degree of change. If the weatherman predicts a 90° temperature with a 95% humidity, does it make any difference that the day was really 92° and the humidity was only 93%? On the other hand, if it should rain and this turned to sleet, it would be another matter entirely. We must look at actions which occur in business and government in this perspective if we are to help management conduct affairs effectively.

To be important to the boss, a change from predicted results must be relatively significant to the total order, program or plan. If not immediately significant to the total, it must vary adequately in the specific so that it will have a decided effect on the general. It should be of such magnitude as not to be merely a "vibration damper" and balance out other variations.

The key to important variances really is contained in the pocket of the planner, programmer, scheduler, or whoever schemed the particular operation. He knows how serious they really are. He has a prime interest in correcting the mavericks, more so than we. It is our job to help him and the boss to get things back on the chalk line. Gaining this fellow's confidence is vitally important in the analyzing job. This will allow time to be spent looking at meaningful items. For example: A two percent variance on a million dollar order is \$20,000; but a ten percent variance for a thousand man hours at two dollars an hour is only \$200.

After recognizing such variances, we must determine what effect they have

had or will have on schedules, delivery dates, cost, personnel, inventory, etc. Maybe it is negligible, or maybe it is extremely important. We must be sure that what we examine in detail is important. A working knowledge of the plan, order, or program; sound judgment; and the intuition of an analytical mind which recognizes the economic facts of life are mandatory in order to accomplish adequate variance analysis.

Synthesis, or putting together what has been analyzed, provides us with the management estimate of the situation. We must now determine what all these data, all these questions and their answers, really mean. Have we, in our efforts, unearthed anything that is meaningful to the boss? Do we have some information that he should know about and upon which he should render a decision which will make the company more money than it would normally make, or lose less than it would otherwise lose? Are we producing so fast that we will run out of work in some areas, while in others we are developing insurmountable backlogs? Do we have too many people or too few? Are we producing so slowly that we will miss shipping dates? Have we tied up too many of our resources in inventory, or not enough? Any possible problem area in the particular business entity to which we belong is deserving of the following statement from us as staff men on a continuous basis: "Nothing is wrong or is about to go wrong, and no adjustment is necessary"; or, "this is wrong, and it needs adjustment—the following should be done." When we prepare our information to answer these questions, *on time*, we are practicing reporting by exception.

Among the Inadequate

Finally, our recommendations must be salable products. If necessary, they should be supported in detail. However, we must constantly remember that the boss is a busy man. When we use his time, we dare not waste it. Recommendations must state in simple terms what should be done and why. They should adequately inform the boss so that he need only accept or reject and then direct what actions are to be accomplished.

We *do* become the indispensable men, and we *do* practice progressive summarization and exception and pyramidal reporting when we: collect, analyze, synthesize, and present a recommendation as a basis for decision and action. When we do not do all of these, and still use the phrases, we should count ourselves among the inadequate. ■

ARMED FORCES MANAGEMENT



Research Rundown

Outlook on The Next Missile

Military missile experts hoping to turn a corner in the missile business by tempering new weapons developments with common sense are perplexed by a recent statement from their boss, Secretary of Defense Robert S. McNamara.

The pointed, and so far unanswered question being raised all over the R&D laboratory lot is "why McNamara is talking about 'a medium range missile' as though it will be a new, start-from-scratch weapons project."

Argument: with in-house savvy on the book-length list of other missiles, making an MRM for the Air Force would require only modification of present missiles already operational or nearly or close to becoming operational: Pershing, Polaris, Minuteman, etc.

"If they launch a new full-scale development, there must be politics in the woodpile somewhere," one missile engineer commented.

Back to Billy Mitchell

With top Defense officials chopping away at such manned air machines as nuclear powered aircraft, the B-58, B-70, and Dyna-Soar, a rapidly growing group of Air Force officers are convinced "we're back fighting the same battle Billy Mitchell fought, and we thought had been won for us decades ago."

At present, there are few manned aircraft programs not in serious jeopardy of being erased—and the long range programs are hanging like limp rags. The air-minded military claim their fear is no longer about delivery of strategic bombs, which most will agree missiles can do just as well, but with reconnaissance.

With spy satellites a long way off, they question Defense front office answers with: "How will we know if we hit what we aimed at?"

The missile and conventional war military counter that many of the thousands of officers with wings on their breast refuse to recognize the passing of many aspects of air-warfare just the same way the battleship admirals refused to recognize the passing of surface naval warfare or the cavalry generals refused to recognize the passing of the military value of equestrian mobility.

"They're not fighting Billy Mitchell's battle. They're more like the critics of Billy Mitchell who tried to stop the advance of military technology," one Polaris-connected Navy officer said.

BuWeps To Adopt PACE

One more clue that Defense support operations are getting a strong management shot-in-the-arm cropped up recently when Bureau of Weapons' boss, Paul D. Stroop, announced that BuWeps was adopting PACE (for Performance and Cost Evaluation).

PACE object: establish tight management control over individual operations, work effort. BuWeps will adopt the highly publicized system slowly (see April, 1959 AFM), and is currently cranking up a "pilot study" at one of its installations.

Three-Stage Test Due For Zeus

Next move in the Army's effort to get the Nike-Zeus anti-missile missile accepted by DOD and the Kennedy Administration will involve a complete, three-stage firing minus only the nuclear.

Threat to the program is U.S.'s present stand on nuclear testing. If approved, the Zeus nuclear detonation would occur in space or "at its fringes" in a trial against an Atlas target missile fired from California over the Pacific Missile Range next summer.

Creating some anxiety in Zeus technical circles are possible Soviet findings in their recent series of nuclear tests in the atmosphere. The feeling is that the Soviets may have learned enough to steer development to their own antimissile techniques. U.S. technical people are primarily concerned about learning the effect of an in-space nuclear detonation and its effectiveness in destroying or eliminating potential Zeus targets.

CONTROL managEMENT MANAGEMENT CONTROL

*Where the separation lies
in the "management control" theory . . .*

by Col. Carl R. Yost,
USA

SINCE WORLD WAR II, U.S. military strategy, weapons systems and tactical concepts have yielded to a massive evolution. To career personnel of the Army, both military and civilian, the changes have generally been obvious, essential, understood and accepted.

Concurrently, and with equal vigor, there has occurred an evolution in the traditional military concept of Command. While this evolution has been greatest in administrative and logistical activities, its impact is not confined to these areas. It is attributable only in part to the changes in military strategy, weapons and tactics. Most of the impetus has been provided by a mixture of social, political, economic and technological pressures. The problem here is that the changes are less obvious, not always considered essential, and not generally understood or accepted.

I refer, of course, to the increased use of the term "management" in describing the duties of the military commander, and to the significance of the managerial control function. It is the control function with which this treatise is concerned, be it exercised by a Commander, Manager, Executive or Chief. It is the belief of the writer that this is probably the most important, and least understood, of the several executive functions which in-

clude planning, organizing, directing, coordinating and reviewing.

(I am willing to add, though it is not essential to what follows, that the distinctions between *command* and *management* are much more apparent than real. AR 1-24, 21 Nov 58, presumes to differentiate between Command and Management by offering definitions of the two terms. Significantly, the two definitions reply on the same adjectives in reaching the believed distinctions).

A Clear Understanding

"Control" in the minds of many, has become firmly identified with Comp-trollers, numerical data, dollar signs, statistics, accounting and organization charts. Similarly, "management" is often viewed as a vague admixture of staff meddling and a usurping of command prerogatives. Used singly, the two words are considered by some to be socially and officially unacceptable. Used together they constitute a profanity.

Why is this? Why do we find such a wide spectrum of acceptance, ranging from ardent advocacy to outright rejection? Does the concept of control, for example, constitute a deterioration in our society? Does Command suffer in the application of managerial processes? The frequency of the use of

the word "control" in our daily affairs is unimaginable.

What, exactly, do you believe to be meant by the term "management control?" Can you give a good clear-cut definition? Do you think your boss, or the people working under your supervision, would agree with the definition you give? Try these questions on yourself and on your immediate associates. You can probably have some fun, and you will surely achieve an increased understanding of working relationships affecting you.

When these questions were asked of a number of managers, in both government and industry, the responses showed a surprising lack of agreement. I say surprising because in a field for which theory and practice has been developed to the extent it has in business management, terms should be precise and unambiguous. The management literature, which is vast, reflects about the same variety of views as entertained by management men themselves, and so does little to clarify the situation.

Obviously, as managers, we must have a clear understanding of what we mean when we talk "management control." A manager who does not understand management control can hardly be expected to exercise it in an efficient and effective manner. Nor can

staff men, who have the duty of designing control systems, do an efficient job for their organization without a clear understanding of management control. And certainly, anyone who is subject to control by others, has to understand clearly what is meant, if he is to be contended in that relationship.

In the matter of management controls, knowingly or unknowingly, we all have knowledge, experience and interest. As managers we control and direct the utilization of resources and we are, in turn, controlled and directed by a higher authority. How this control is accomplished, and how it can be accomplished more effectively, is of concern to every manager, and is the objective sought in this writing.

What Is Control?

Understanding control really means understanding three principal things about it. What is control? What is controlled? Who controls? By developing answers to these three questions, I propose to construct for your consideration a concept of control. You may not agree with me, but perhaps my statements will help you to achieve a more definitive understanding of your own views. My concept of "what is control" can be simply stated as: "management action to adjust operations to predetermined standards, and its basis is information in the hands of managers."

The petroleum industry offers a good example of what I mean by this definition. A valve in a pipeline regulates the rate of oil flow. Beyond the valve, a device may be installed that measures the rate of flow. The measuring device can transmit signals to a control mechanism, which, when it detects any deviation from the prescribed rate, or rate limits, adjusts the valve regulating flow rate. The control mechanism thus acts to adjust operations to predetermined standards and it does so on the basis of information it receives. In exactly the same manner, information reaching a manager gives him the opportunity for corrective action, and is his basis for control. He cannot exercise control without such information, and he isn't managing if he isn't exercising control.

Elements Don't Control

Some students of management have defined control as what results from having objectives, plans, policies, organization charts, budgets, etc., and they consequently refer to these elements of the management system as controls. It is not difficult to understand why these devices are so described by proponents of this point of

view. Without objectives, for example, we all know that results are likely to be other than desired. So it is assumed that they function to control the results.

Nevertheless, these elements are not controls. They are essentials for control, and means of control, but they are not in themselves controls.

These techniques and methods do have an important role to play in a good control system, however, and to bring this out, I want to discuss a few of them.

To accomplish any task, except through accident, people must know what they are trying to do. Objectives fulfill this need. Without objectives, people, or an organization, may work quite industriously, yet, working aimlessly, accomplish very little. Plans and programs complement objectives, since they propose how, and according to what time schedule the objectives are to be reached.

However, although objectives and plans and programs are indispensable to the efficient management of any human endeavor, they are not controls. Control is the act of checking to determine whether the plans are being observed and whether suitable progress towards the objective is being made, and then acting as necessary, to correct for any deviations.

Policy Is Not Control

Policy is simply a statement of an organization's intention to act in certain ways under specified circumstances. It is a general decision, predetermined, and expressed as a principle or rule, establishing a normal pattern of dealing with recurring conditions or events. A statement of policy is useful in economizing the time of managers, and assisting them to discharge their responsibilities equitably and consistently.

Nothing in these advantages however, makes policy a control. On the contrary, by their very nature, policies generate the need for control; they do not fulfill that need. Adherence to policy is not guaranteed, nor can it be taken on faith. It has to be verified. Without verification, there is no basis for control, no control, and incomplete managing.

Organization is often cited as a control. This detracts both from its own significance, and from the concept of control. Organization is part of the giving of an assignment. The organization chart is the first crude step in the definition of assignments. It gives to each individual, in his title, a first approximation to the nature of his assignment, and orients him as to whom he is accountable, but it is not

a control. Control is checking to determine whether the assignment is being executed as intended, and acting on the basis of that information.

Assignments are only partly defined, however, by the preparation of an organization chart. Titles and lines of authority must be supplemented by specific delegations of authority and responsibility. Delegation clarifies the extent of authority of individuals, and in that way, serves to define assignments. That they are not controls is apparent from the very fact that wherever there has been delegation of authority, the need for control increases. This could hardly be expected to happen if delegations of authority were in themselves controls.

Delegate Authority

Control becomes necessary whenever a manager delegates authority to a subordinate, because he cannot delegate, then simply sit back and forget all about it. A manager's accountability to his own superiors is not diminished one whit as a result of delegating part of his authority to a subordinate. It is therefore incumbent upon managers who delegate authority, to exercise control over actions taken under the authority so delegated. This means simply that results must be checked as a basis for possible corrective action.

The question of whether budgets are a control does not yield a straightforward answer because budgets perform more than one function. They perform three. They define the assignments which have flowed down from the chief executive; they present the objectives, plans and programs of the organization, expressed in financial terms; and they are the basis of recording and reporting the progress of actual performance against these predetermined objectives.

Budgets Report Progress

In expressing the objectives of the organization, budgets are not a control, nor do budgets qualify as a control in their function of defining assignments. They are a means of control, only in the respect that they report progress of actual performance against the program, expressed in the common denominator of dollars. It is this information which enables managers to take action directed toward bringing actual results into line with objectives.

Let me summarize what I have said in answer to the question, "what is control?" I have tried to show that objectives, plans and programs, policies, organization charts and budgets are elements of the managerial system, but

Occurs largely after the fact . .

are not properly regarded as "controls." They are the pre-established standards to which operations are adjusted by the exercise of control through managerial action. Managers control adherence to the objectives, plans, policies, organization structures, and procedures, which have been laid down.

What is controlled? Now, having developed an answer to the question "what is control," and a line of reasoning compatible with the answer, we are ready to take on the next question, "what is controlled?" My answer is (1) people are controlled, and (2) objectives, plans programs policies, budgets, organization structure are controlled by management. As noted earlier, control techniques actually control nothing. The only thing that is affected by controls is people—their attitudes and their behavior.

Dynamic in Character

You don't control the quality of material; you control the engineers who set the specifications, the purchasing agent who buys, the lathe operator who processes it. You don't control operating costs or the capital cost of your machines; you control the people who decide what equipment to buy, how much maintenance is to be performed, what the load factors will be.

So, you control people. Simultaneously you control the devices. Earlier, we assumed that these devices were fixed or constant, and that it is management's job to control adherence to them. They were considered as static check points or permanent standards against which management could measure and evaluate performance in exercising control.

These standards are, of course, not fixed or constant. They are dynamic in character, for they are periodically altered or modified. However, for a moment, let us give consideration to their static nature, as I feel that this quality best lends itself to the purpose of my discussion.

Who Controls?

An objective is static until revised; a plan or program is static until it is altered or abandoned. They have a kind of temporary durability or limited permanency. They are in force until superseded. The same static quality inheres also in the other elements or devices of the managerial system we have been discussing. Policies, organizational structure, procedures, standards, and job descriptions, are, of course, all periodically altered. But,

like objectives and plans, they retain their force until they are either abandoned or revised. These are, to use a mathematical anomaly, the "variable constants" of the management control formula.

I would like to illustrate this with a very simple example. Let's consider a job shop that has a daily performance standard of 100 units. For a considerable period of time, production has been meeting or exceeding this standard. Suddenly output falls to 80, and management, in exercising its proper control function, asks "why?" If management's analysis and evaluation reveals that there have been fundamental and permanent changes in either materials, tools, personnel or procedures, it may be necessary that the standard be revised. The standard is controlled, in this instance, to conform with a new situation. On the other hand, if management's inquiry reveals that the standard is valid, it would become necessary that the attitude and/or behavior of the people be changed.

Who controls? Now we can turn to that very important third and final question of "who controls."

The answer, and I believe this has become almost axiomatic as a management principle, is that "that person should act who is responsible for the results." Results must here be given the broadest interpretation—the conformity of all operations with all standards and the adequacy and correctness of all standards. Hence, whoever had the responsibility for specifying and establishing a particular standard, has to be ultimately responsible for controlling adherence to it, and is responsible therefore, for such corrective action as is necessary. Those below him in the chain of command may help him, but they cannot relieve him of his final responsibility for control. For this reason, the authority for managers to establish standards should be delegated as far down in the organization as practicable.

The basis of control, as I stated earlier, is information in the hands of managers. Obviously, for intelligent management action, information must be current and reliable. This information must come to the manager through reports, using reports in the very broad sense, to include all statistical, narrative, graphic, and oral information, conferences, staff meetings, TV screens, and any other means of transmitting data to a manager as a basis for action. Even the non-receipt of information, as where management is by exception,

can be informational and imply the existence of control.

Control occurs largely after the fact, and this is a point that is troublesome to some managers. It should not trouble them, since this is simply and inevitably a part of the nature of the concept. The situation is entirely comparable to the petroleum pipeline device I described earlier. In that control system, the detecting device continuously evaluates results and transmits data back to the control mechanism, which, sensing the difference between the actual and the desired results, acts to restore results to the desired level. The results, just as in management control, precede the exercise of control.

ADPS Holds Promise

Control systems, human or mechanical, deal with transfers of energy, and these transfers take time. This fact underscores the importance of speed in reporting. Reducing the reporting time lag between performance and action will lead to better management. This is one of the most attractive features of automatic data processing. In many of our supply operations, ADPS holds promise of giving managers operating reports almost as quickly as the detecting device in my petroleum pipeline example.

In summary, control means action directed toward bringing operations into conformity with predetermined standards and goals; revising standards and goals as required; that it is exercised by managers; and that its basis is information in their hands after the fact.

Sure Sign of Progress

Finally, I would like to urge that you commanders and managers restrain any emotional connotation that the word "control" holds for you. As a manager, you must "control," and you are all, in turn, "controlled" by a manager. You cannot perform well if you anger, cringe or panic at the thought. Instead, experienced managers are realizing that, as their authority is broadened, their superiors must place increased reliance on control as a means of insuring the discharges of their own responsibility.

But, at the same time, supervision of their activities by superiors becomes less close. There seems every reason to believe, therefore, that as the real nature of control becomes better understood, managers will come to recognize that their being subject to it in increasing measure is as sure a sign as any of their progress in the organization and in the fulfillment of their position. ■

ARMED FORCES MANAGEMENT



Procurement Trends

Aircraft Spares Problem Getting Rougher

The Air Force has reportedly organized a whole group of officers to ramrod through the system a fast beefing-up of aircraft spare parts procurement. "Brother, we're sweating this out" was the comment of one top Air Force officer concerned with the problem, which has spread way beyond the NATO area, noted in AFM last month.

A report, unconfirmed, says the AF went too far in its economizing move, has virtually no back-up parts, and is faced with a real emergency. Making the headache worse is the increased aircraft activity rate and the resulting compression of the attrition rate.

Navy Contractors To Get More Incentives

The Office of Naval Material made an initial policy declaration in the form of a memorandum to its contracting officials giving detailed guidance to implement the DOD-wide program to cut weapons cost by increased use of contractor incentives.

The memorandum pointed out that profits under incentive contracts have been ranging from 4.5 percent to 9 percent, with a target in the neighborhood of 7 percent. In fixed-price-incentive contracts the sharing ratios of savings have been 80-20 percent or 75-25 percent. "Neither these profit percentages nor these sharing ratios appear to provide contracts with sufficient incentive to go all out to reduce costs or improve performance," the memorandum said.

The Navy intends, according to the memorandum, to support higher profit for superior contract performance and lower costs, and issue higher penalties for poor performance. It will also encourage increased use of firm fixed price contracts, incentive contracts, and discourage the use of cost reimbursement type of contracts. Incentive provisions in CPIF and FPI contracts may be based on cost, performance, reliability, quality and delivery of the product.

Congress To Watch DOD Reforms

The House Armed Services Committee is reported ready to withhold its long-standing objection to the handling of incentive contracting to give DOD an opportunity to see if promised reforms will work.

If the DOD program scores demonstrated successes, Pentagon procurement officials could well win the blessings of Chairman Carl Vinson (D-Ga.) and others who have repeatedly criticized unearned incentives going to some contractors. Though the law gives DOD the authority to use any contract it devises, the sanction of Congress is important, since the law can be changed; and Vinson, skeptical of incentive contracting, once proposed such a change.

Smathers Committee Report Scrutinized

Pentagon procurement experts are taking a close look at the report of the Military Procurement Advisory Committee, a seven-man group from industry appointed last year by Sen. George A. Smathers, chairman of the Government Procurement Subcommittee of the Senate Small Business Committee.

Early comments are that though the report tends to favor the industry viewpoint on many subjects (such as demanding that the government keep less proprietary rights to information secured during defense contracted research), there is remarkable unanimity in many areas between the committee report and views held by Defense experts at work modifying the ASPRs.

The committee favored elimination of the statutory preference for formal advertising, that the present renegotiation statute should be allowed to expire at the end of FY '61, that DOD should eliminate all preferential or prejudicial influences on free selection of contract types (including Review Board actions), and that DOD should consider simplified procedures permitting settlement of minor terminations expeditiously.

It is probable that the Government Procurement Subcommittee will support the industry committee's findings.



Newsletter

Armed Forces Management Association
Washington 25, D.C. Phone: ME 8-1071

National President: Hon. Thomas D. Morris

Exec. Vice Pres.: RAdm. Thomas B. Neblett, USN, Ret.

Eighth Conference

Now that the Eighth National Conference in Chicago is history, we have a number of triumphs to which we may point with pride.

The attendance attained a record at almost 400. There was an atmosphere of purpose and dedication enhanced by the most inspiring program of speakers from the highest levels in Defense, industry, and educational institutions.

The Eighth National Conference was the occasion for presenting our National Awards, the recipients of which stand out as being responsible for major achievements; and ranged from those within the Association to national figures.

On the evening of October 25th at the National Awards Banquet, attended by approximately 300 persons, AFMA National President, The Honorable Thomas D. Morris, presented the following certificates:

NATIONAL ACHIEVEMENT AWARD: Vice Admiral Harry E. Sears, USN, Ret., former Executive Vice President Armed Forces Management Association; John F. Burke, Director Civilian Personnel, Fifth U.S. Army, President of the Great Lakes Chicago Chapter; James H. Leverenz, President San Antonio Chapter;

NATIONAL LITERARY AWARD: C. W. Borklund, Publisher of Armed Forces Management Magazine;

OUTSTANDING CHAPTER PLAQUE: Atlanta Chapter 24, received by Colonel Morton P. Brooks, Chapter President;

NATIONAL MERIT AWARD: The Honorable Robert S. McNamara, Secretary of Defense, received by Honorable Paul R. Ignatius, Assistant Secretary of Army (I&L);

NATIONAL SERVICE AWARD: "To the group which has made the greatest contribution to the improvement of management in the Armed Forces." This group consisted of the following distinguished leaders, responsible for promoting the integrated management of common supply activities in the Department of Defense. Certificates were presented to each of the group as follows: Senator Paul H. Douglas (Ill), received by Douglas Anderson of Chicago; Lieutenant General Andrew T. McNamara, USA; Rear Admiral James W. Boundy, USN; Major General Frederick J. Dau, USAF, Ret., received by General William F. McKee, Commander Air Force Logistics Command; Honorable E. Perkins McGuire, former Assistant Secretary of Defense, received by Paul H. Riley, Deputy Assistant Secretary of Defense I&L; and Perry M. Shoemaker, Chairman of the Board, Erie and Lackawanna Railroad. The National Service Award was also presented to North American Aviation, Inc. for their outstanding contribution to production management and programming methods for sustained performance in the manufacture of large rocket booster motors, with S. K. Hoffman, President of Rocketdyne, receiving the certificate;

HONORARY LIFE MEMBERSHIP: General Paul D. Adams, USA, Commander Strike Command; Vice Admiral Harry E. Sears, USN, Ret.; Lt. General Mark E. Bradley, Deputy Chief of Staff, Systems & Logistics U.S. Air Force, received by Major Gen. W. O. Senter, USAF; Lt. General Roscoe C. Wilson, Deputy Chief of Staff R&E, USAF, received by Lt. Colonel Campbell, USAF; Dr. Howard K.



Ned Cooney (left) and Jack Hoyle (right) of IBM, demonstrate the IBM 1403 to Lt. Gen. Emerson L. Cummings, Commanding General, Fifth Army.

Hyde, Economic Advisor to the Government of India, received by Rawlings S. Poole;

CORPORATE MEMBERSHIP CERTIFICATES: C-E-I-R Inc., received by Dr. Herbert W. Robinson, President; Dashew Federal Products and Research Corporation received by Executive Vice President James A. Finigan, Jr.; Ernst & Ernst, received by George N. Collins, Washington Supervisor Management Service Division; Machly Associates, Inc. received by Arthur G. Beale, Comptroller.

Chapter Competition—The standing of chapters as announced at the Eighth National Conference is as follows: First; Atlanta Chapter 24, Fort McPherson; Second, Atlanta Chapter 28, Atlanta General Depot; Third, San Antonio Chapter 17, Fort Sam Houston Texas; Honorable Mention: First, Aberdeen Proving Ground 12, Aberdeen Maryland; Second, Jacksonville Chapter 40, Naval Air Station, Jacksonville, Florida. National Headquarters congratulates all of these chapters for their excellent spirit of competition and their top-notch work in management areas.

If there was one feature of the Eighth National Conference we could point to as a soft spot, it was the absence of many chapter delegates whom we felt could have been there. Although we had excellent representation from the membership in general, it is strongly urged that chapters start planning now to send at least one delegate from each chapter and of course as many other as possible.

This year we had four excellent "Management Ideas from the Field," which were most ably presented by chapter representatives. Aberdeen Proving Ground has sent in an excellent "Idea" but at the last minute was unable to send a delegate for the presentation.

Our National Conference should be oriented toward these presentations from the field. In the future more time will be allocated for this session and chapter programs.

It was the consensus of opinion that the Eighth National Conference was highly successful and will go far toward furthering the objectives of the Association, namely the exchange of management improvement ideas in the various echelons of the Department of Defense and our counterparts in industry and educational institutions.

Thomas B. Neblett

ARMED FORCES MANAGEMENT

AF Retraining

(continued from page 23)

cludes both basic and specialized training to be given within the Air Force and at the manufacturers' facilities.

Plans called for the development of a cadre of some 300 personnel possessing production planning, engineering, line management, and instructor specialties. These capabilities are to be used in the development of balanced requirements as they evolve.

Specific situations such as this have helped to prove the validity of the "training by technology" concept, providing continuing development of basic skills and knowledges and the up-grading of competence levels consistent with technological advancements.

To summarize, the retraining and skills conversion effort has been centered on the following:

- Meeting known needs.
- Improving systems management techniques to provide earlier identification of oncoming personnel requirements.
- Analyzing the capability of the current workload to assume oncoming requirements.
- Improving training and development programs, processes and techniques.
- Providing for maximum use and retention of the on-board work force.

The major problem—the lack of firm, long-range estimates of personnel requirements—has now been partially resolved. This was accomplished by improvements in projection techniques and the documentation of all requirements of a system, now prescribed by the Systems Management Program.

Still remaining is the problem posed by the degree of firmness and validity of long-range workload projections and estimates.

That investments in retraining are acknowledged is shown by the fact that more than 10 per cent of the 150,000-man work force was reassigned last year to meet the changes in workload. Such an investment calls for the best possible long-range planning.

Future efforts will be directed along a number of paths. The necessity for improved projection of changing skill requirements will be emphasized. All levels of management will be urged to prepare for changes by the progressive and timely retraining of the work force. Employees will be encouraged to recognize their responsibility for self-development and outside schooling to attain new and advanced skills. They also will be helped to recognize the necessity for their reassignment and retraining in a rapidly changing technological situation. ■

DECEMBER 1961



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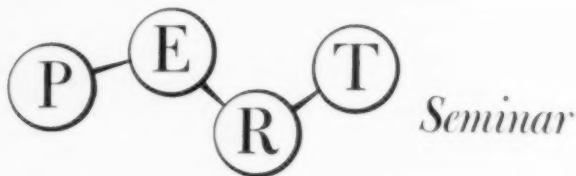
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In My Opinion . . .

(continued from page 7)

help the Air Force build missile sites.

Third, I believe you should run more personnel stories. Col. Douglass' article on the civilian-military relationship, and the one page letter taking the hide off the personnel officer at Patrick Air Force Base are examples of the type of material that should run more often.

This is the first letter I have ever written to a magazine. Its length should indicate that I believe you perform a valuable service.

Name withheld by request

July Commendation

I want to commend you . . . on the publishing of the July edition of **ARMED FORCES MANAGEMENT**. Only very competent hands could select a special frame of reference, like ADP, and produce a well-balanced picture of the promises and the problems posed by the military use of new information processing technology. I have heard several complimentary comments on the July issue from my colleagues here in the Pentagon and at field activities.

Personally, I express my appreciation for your publishing my article under the intriguing title: **Is Management Ready for ADP?** I would like permission to reproduce copies of the article for office use.

Paul J. Hyman

Materiel Management Division
OASD (Installations & Logistics)

How could we refuse? Permission granted.—Ed.

Attention Drawn

We have read with interest the "NATO Forecast" article on page 29 of the September 1961 issue of **ARMED FORCES MANAGEMENT**. I should like to draw your attention to several errors in fact contained in the article, which it is believed were based on erroneous information. Because your magazine has a good reputation in U.S. Defense circles and is circulated also in the Ministries of Defense of other countries, we should like to correct the misleading impression of the United States and of the NATO coordinated Weapons Production Program conveyed by the article.

The following misstatements are noted:

Item 1

(a) The French AS-20 air-to-ground missile is referred to as being operational and equal to or superior to the U.S. BULLPUP.

ARMED FORCES MANAGEMENT

Comment: The writer is referring to the French AS-30 air-to-ground missile, a different weapon which is not yet operational. BULLPUP has been operational in U.S. Navy and U.S. Air Force units since 1959.

(b) "NATO tried to buy BULLPUP five years ago, were told by the U.S. they couldn't have it."

Comment: BULLPUP was not operational until 1959. Under existing policies, U.S.-produced weapons were not made available to other countries until they had proved themselves in operational use. Information on the BULLPUP system was released to NATO countries in October 1959 with a view to its acceptance by them for coordinated European production.

(c) U.S. is insisting on the purchase of BULLPUP instead of the comparable French weapon.

Comment: Incorrect. Both the French AS-30 and the U.S. BULLPUP missile systems have been given an objective side-by-side review and technical evaluation by groups of specialists from all interested countries under sponsorship of the NATO Armaments Committee over a period of two years. Rather than "insisting" on the BULLPUP, the U.S. position has been to present as complete information as possible to enable the countries to make their own selection of system. The French have done likewise, since both systems meet NATO military requirements. Further, the BULLPUP missile system has been offered to NATO for European production, not for purchase from U.S. sources. This is entirely consistent with U.S. policy to establish greater coordination of production within the Alliance.

(d) U.S. Government agencies are being used to sell weapons.

Comment: This is a complete distortion of fact. The government agencies involved are promoting establishment of coordinated European production programs which is an entirely different effort. The weapon system in this instance happens to be U.S. It is a proven operational weapon and lends itself to an economical production in Europe.

Item 2

(a) "European industry will only produce about 40% of the total contract cost of the NATO F-104G aircraft."

Comment: Originally, this program called for approximately two-thirds of the total contract cost to be spent in Europe. Due to delays on the part of the European participants, they have found it impossible to meet the dates for production of aircraft without recourse to U.S. sources for additional components. The present figure is therefore closer to 50% of the total

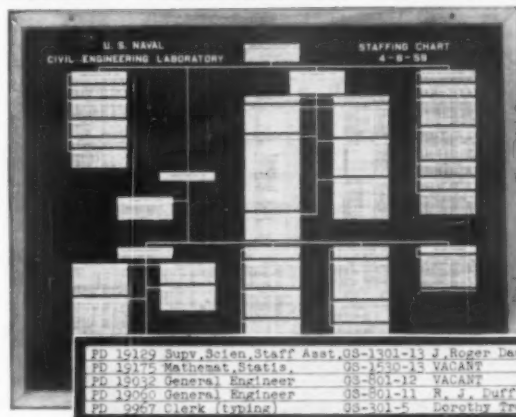
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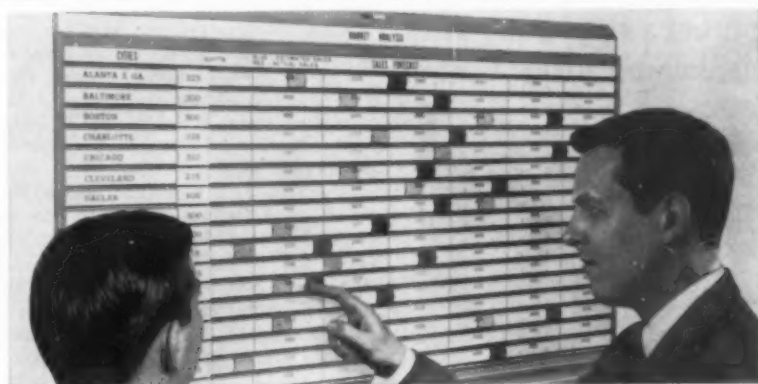


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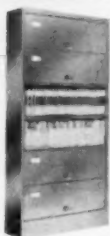
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contract cost to be spent in Europe.

(b) "Electronic components have been retained with a tight fist by the U.S."

Comment: This statement is inaccurate. To name a few of the electronic components to be produced in Europe: NASARR, Inertial Navigator Automatic Flight Control System, Homing Indicator, TACAN, UHF and IFF equipments.

Item 3

"What is the reason for this rule you have that on any armaments construction program you place in Europe, at least 50% of the total dollars must be spent with U.S. industry?"

Comment: No such rule exists.

We should be glad to arrange a background briefing on this subject with a qualified spokesman for you or a designated member of your staff, if you so desire.

Robert E. Button

Public Affairs Advisor
U.S. Mission to NATO and
European Regional Organizations
Paris, France

We acknowledge the typographical error misnaming the AS-30. The statement that the U.S. withheld information on Bullpup (during the development stage) when asked for it by NATO allies originated with an Air Force Colonel of unquestioned reliability. What better way to insure that Europeans duplicate our efforts if information about U.S. weapons is withheld until they have proved theirs in operational use?

The statement that U.S. insisted on purchase of Bullpup instead of AS-30 originated with Pentagon officials directly connected with the program. That they have been overruled is indicated by the article in the October issue of AFM (U.S. Acts to Unite NATO: Moves to End Duplication of Arms, Waste of Resources).

The charge that U.S. government agencies are being used to sell U.S. weapons originated from discussions with almost every major U.S. manufacturer of weapons systems, who pointed out, among other examples, that \$25,000 of the taxpayers money was spent to produce a glossy commercial brochure (stamped Confidential) to sell the NATO countries on Polaris.

We do not want to quibble with Mr. Button on how much work is being done in the U.S. on the NATO F-104G (his figure is 50 percent, ours is 60 percent), nor do we want to discount the work being done in Europe he referred to. But either Mr. Button's figures or ours indicate that half of the total contract cost will be spent in the U.S. Our

informants say that much of this was not because of "delays on the part of the European participants . . ."

The difference of opinion between Mr. Button and many of our industry informants indicates that a serious communications problem exists—a point we have consistently made. We believe that the October issue of AFM has helped to clear up some of these problems, and that the transformation of Pentagon policy under McNamara has done much to eliminate the problem.

We welcome the offer by Mr. Button to be briefed by the Paris NATO staff, and will arrange for such a briefing in the near future.—Ed.

A Day Late and . . .

I was particularly interested in the "money tree" article in the August issue, since I had headed a similar effort in the Navy three years ago. Hence, my concern with the article's statement "(Significantly, however, Navy is cranking up a "dollar stretch" program which looks an awful lot like the same thing.)"

Our Operation Dollar Stretch, just as in the case of Money Tree, was very successful in stimulating economy thinking, ideas and applications. It received considerable publicity at the time. I am concerned about the confusion in the minds of Navy readers of ARMED FORCES MANAGEMENT who all remember the Dollar Stretch campaign.

W B. RICE

Navy Management Office
Department of the Navy

ROUTINE 091758Z /UNCLAS/ 29MSS
434. YOUR ARTICLE ENTITLED "MARK BRADLEYS MONEY TREE" IN AUGUST "ARMED FORCES MANAGEMENT" IS MOST INFORMATIVE AND WOULD BE OF DEFINITE INTEREST TO THIS HEADQUARTERS SUBORDINATE COMMANDERS.

HQ 29 AIR DIV RICHARDS GEBAUR
AFB MISSOURI.

Document Cited

The author of "Military-Civilian Working Relationships," Part II of which appeared in your October '61 issue, may be interested in . . . DA Form 608-4 (Table of Distribution).

Lt. Col. J. J. Douglass stated in the article that "strangely, my research did not lead me to a document setting forth rank and precedence" among civil service employees. It may be that the TD . . . is the basic document (at each military activity) from which the civilians learn about their "comparative" military rank. This TD form is developed and maintained current in Army Headquarters, Washington.

E. H. Rathman

ARMED FORCES MANAGEMENT



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Does McNamara bypass the JCS staff in making decisions? Is Maxwell Taylor's appointment as Kennedy's personal military advisor a threat to the Staff's functions and powers?

These issues have ignited a major Pentagon controversy. Traditionally the Joint-Chiefs-of-Staff have been the "Brain Trust" in military affairs, advising the President and Secretary of Defense on military policy. Now the Staff feels they are not being consulted in many major policy decisions.

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JCS ISSUE EDITORIAL CONTENTS

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They will be asked: What they consider their major problems.

Is Defense Secretary McNamara bypassing them in making policy decisions?

Does Kennedy's appointment of Maxwell Taylor as his personal military advisor, in effect, create a super-chief on military affairs?

The other side of the story: An interview with Maxwell Taylor to discuss what he thinks about his role in military affairs. *Is he, in fact, a threat to the Joint-Chiefs-of-Staff?* Defense Secretary McNamara will be asked how he feels about the Staff's charges.

AFM will not stop there: Former chiefs of staff will be asked to analyze and evaluate the role, power, usefulness and effectiveness of the Staff, historically and presently.

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Reorganization . . .

(continued from page 33)

Another significant feature in these new divisions will be the Personnel and Administration system. This new P&A system affects mechanization and centralization at division level in the AG Section of the Administration Company. The use of electronic accounting machines (EAM) is an essential first step toward inevitable future use of electronic computers in P&A operations. Centralization at division level is required to permit economical and efficient use of EAM. Unit personnel sections at the battalion level are completely eliminated by the centralization feature. The company commander will still initiate many P&A actions as in the past and will retain as his principal assistants, his executive officer, first sergeant and company clerk. A new and key position in the new system is a Personnel Staff NCO added to the S1 Section of all battalions. This skilled personnel NCO serves primarily in a liaison role to expedite actions between the company, battalion and division echelons.

This division organizational concept develops a new degree of standardization which will facilitate tailoring of these divisions to suit the mission and terrain in which they fight. For example: in Europe our Army will need primarily mechanized and armored divisions, while if forced to fight in Southeast Asia, infantry and airborne divisions or brigades could be used. In the U.S. our STRAC will be composed primarily of airborne divisions available for employment anywhere in the world. The remainder of our Army divisions, STRAF, may be organized as varying types of these four type divisions. In fact the Army may see fit to organize a division with such a mix of battalions as 6 Infantry, 2 Mechanized, and 2 Tank. This flexibility is one of the most outstanding features of this new concept.

These new units are purposely organized with the necessary flexibility to accept new weapons and equipment as they become available. This reorganization did not generate a requirement for new equipment—the requirement was already there. It was generated by the global military commitments of the United States. As long as these commitments exist, the Army will need to modernize its inventory of weapons. The reorganization provides for the most effective use of these modern weapons. Its flexibility will permit incorporation of new weapons without the necessity for further major reorganization. ■

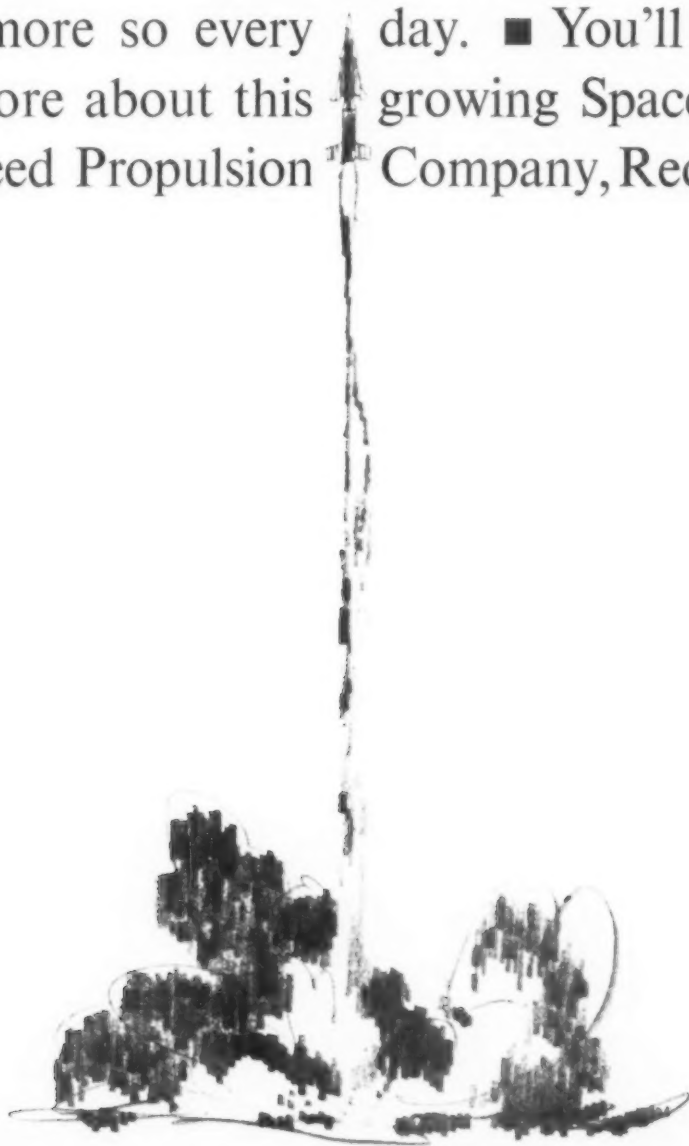
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